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FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

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NOVEMBER, 1942

Vol. 95, No. 11

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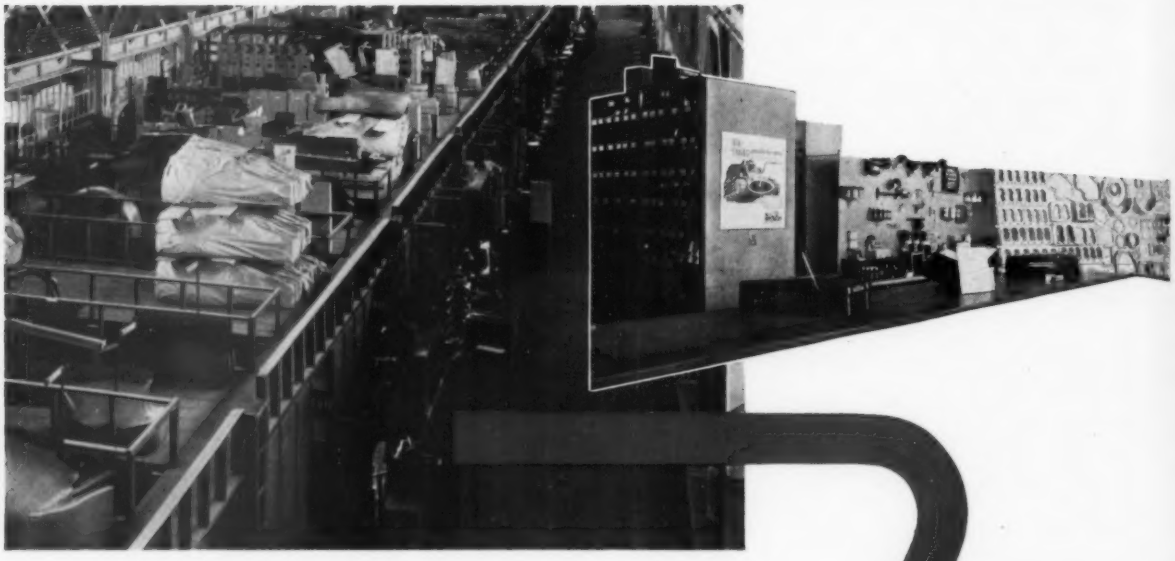

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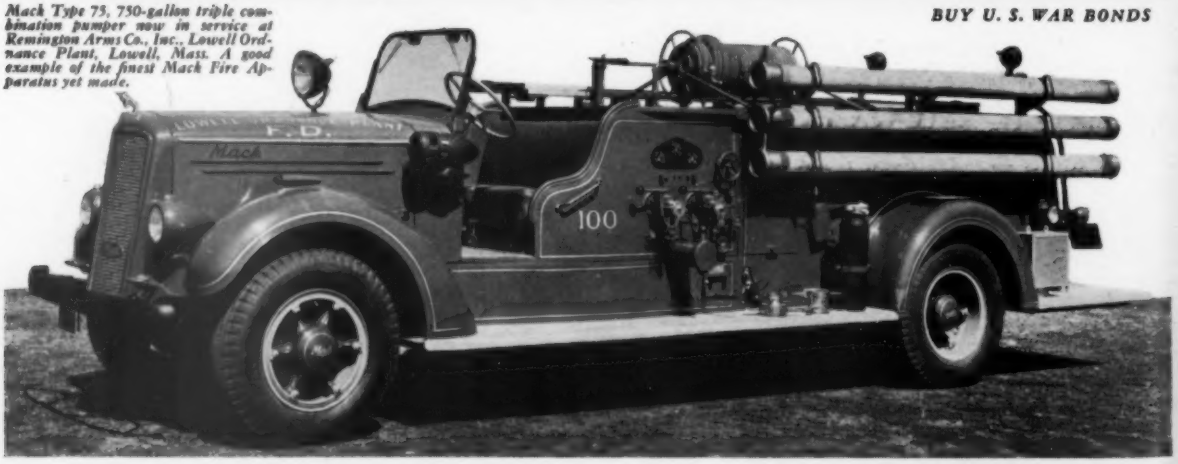

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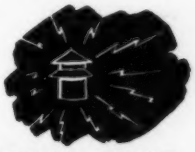

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FIRE ENGINEERING

A Consolidation of Fire and Water Engineering, The Fire Engineer and Fire Protection

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FRED SHEPPERD
Editor
N. N. WOLPERT
Assistant Editor

Cut Out the Frills!

"STRIPPED APPARATUS" is the subject of Fred Shepperd's editorial on p. 674 of this issue, calling attention to the proposed governmental regulations that will strip fire apparatus of all equipment except the very barest essentials.

● "Stripped for action" is a phrase as well as an idea, that ties in well with the war effort. The fire field will play ball.

Here Too!

● But when you stop to think of it, hasn't FIRE ENGINEERING always been "stripped for action", with all the frills cut out, and nothing appearing in these pages except data and information that will help advance the art of fire protection and fire prevention?

● We believe that this "specialization" is the element that makes this publication of maximum value both to its subscribers and to the manufacturers who are its advertisers. Neither needs "frills."

The Publishers

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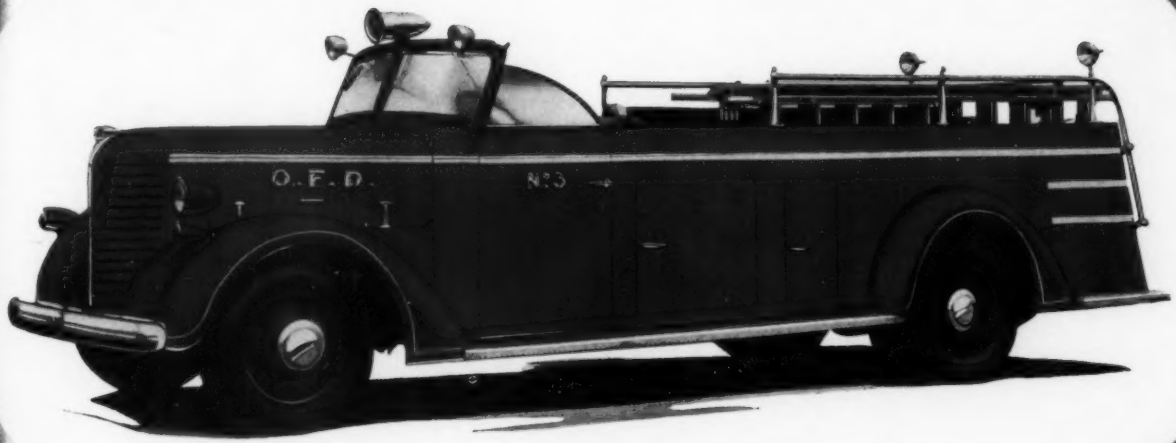

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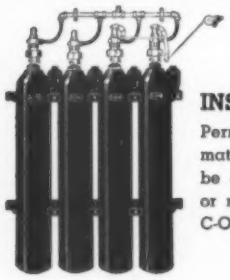

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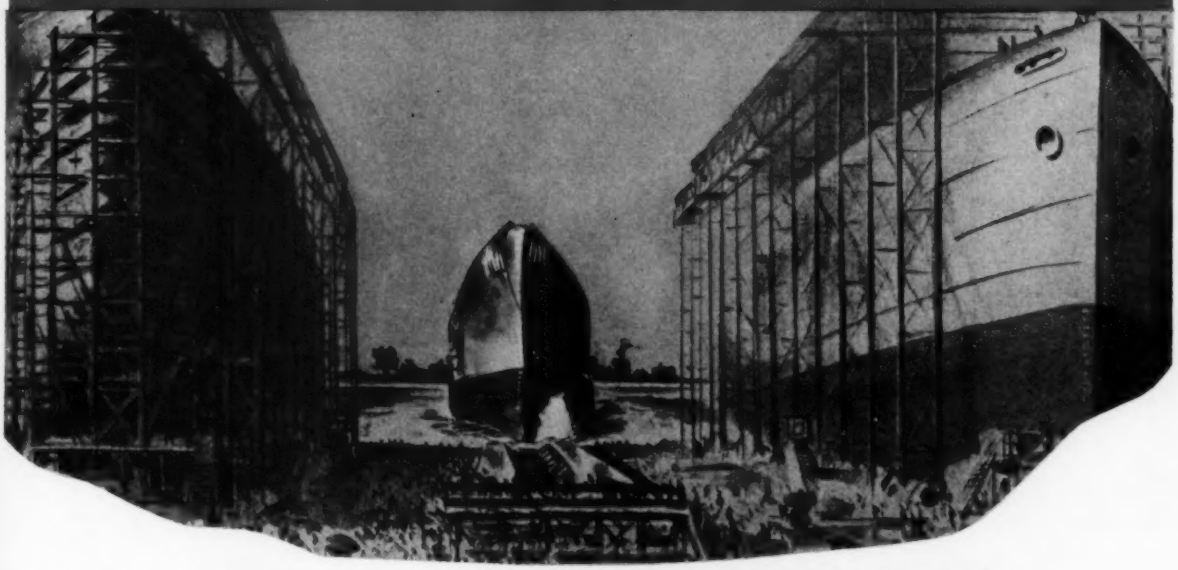

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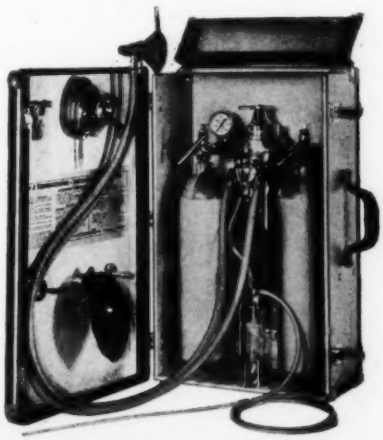

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HUGE FIRE LOSSES IMPEDE WAR EFFORT

ENCOURAGE THE PROMPT USE OF FIRE ALARM BOXES

DELAYED ALARMS ARE CONTRIBUTING LARGELY TO THE APPALLING DESTRUCTION OF NATIONAL RESOURCES. Witness, the following few of many instances:

S. S. Normandie. ". . . a delay of 10 to 15 minutes between the start of the fire and the first alarm received by the fire department. The fire apparatus arrived in *90 seconds after the alarm was given.* The S. S. Normandie is reported to have cost $53,000,000.00."

Jersey City Waterfront Conflagration. Loss: $5,000,000.00. "There appears to have been some delay in sounding the alarm, estimated by City authorities at 20 minutes."

Warehouses. Loss: $1,000,000.00. "When the fire was discovered by the watchman the flames had already burned the telephone wires and he had to go a quarter of a mile to a railroad roundhouse to telephone the alarm."

Fall River Rubber Fire. Loss: $11,000,000.00. "The foreman's attempts to extinguish the fire with an extinguisher were futile. A delay of six minutes or more appears to have occurred."

Fire alarm boxes, adequately distributed, provide the most dependable means for calling the Fire Department. Deficiencies in Signaling Systems cannot easily be eliminated now, but greater safety may be achieved by the intelligent use of existing equipment.

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FIRE ENGINEERING

NOVEMBER, 1942 VOL. 95. NO. 11

With the Editor

No Time for Boondoggling

The Office of Civilian Defense at Washington has embarked on a program intended ultimately to teach professional firemen how to fight fires. The first step will be the training of fire department instructors (twenty-hours of instruction will accomplish this).

The newly trained instructors will, in turn, train additional instructors. Fifteen thousand fire department instructors will thus receive training, it is expected.

There is only one fault with the program.

It is entirely unnecessary at this time!

Very few of the professional firemen the OCD expects to train directly or indirectly are not already very well qualified as fire fighters, and many of them have received teacher-training.

The fire departments in cities in the United States over 100,000 population which have not fully trained their members can be numbered on the fingers of one hand.

And as far as smaller communities, particularly those having no bearing on war preparations of the nation, are concerned, this is not the time to embark on a federally operated teacher-training program. Such program is logically a peacetime activity.

It would seem to us that the effort and the personnel required by the OCD for this innovation could be directed to more pressing activities, activities more directly related to war preparation. There is, we understand, a serious shortage of manpower today. And any activity requiring manpower, and which is not vitally necessary at the moment, should be "out for the duration."

Old Apparatus

For a fire truck to lose its motor on the way to a fire is a most unusual experience. Yet that is just what happened in an Ohio city recently. The unit dropped out, and before the truck could be brought to a standstill much other damage resulted.

This may indeed be considered an unusual occurrence, until it is pointed out that the truck was nearing a quarter century of service.

The public, including many public officials, do not seem to appreciate that fire apparatus, like commercial trucks and pleasure cars, wears out and must be replaced.

Otherwise aged and obsolete fire engines would not be permitted to use the streets and endanger lives and property of the public.

Is it because the public cannot tell the difference between an old and a new machine that they show no concern regarding the age and condition of fire apparatus?

Is it because the fire department keeps all apparatus well painted and polished?

Is it because of lack of interest in the fire department?

We believe it is because of a combination of the three.

But whatever the reason, there is no place in the fire service today for unsafe, aged machines that have long since reached their limit of dependability.

The growing number of war industries makes it doubly imperative that fire apparatus be fully dependable.

Incidentally, fire trucks reach the ripe old age of a quarter-century only because the builders continue to service them and supply replacement parts all during those

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years. And only the established manufacturer of fire apparatus can be expected to have replacement parts available, whether it be five or twenty-five years after the machine is delivered. This seems to us to be a mighty potent reason for buying fire apparatus from well established fire apparatus builders. Should such apparatus cost a little more, this additional cost can well be considered in the light of economical insurance guaranteeing long life and prompt, reliable service.

* * *

Stripped Apparatus

The projected heavy demand by the Army, Navy, Lend-Lease and municipalities for fire apparatus during the coming year will make necessary the stripping of apparatus of many items normally considered essential.

Maximums will probably be established for equipment, including even lights, that may be supplied with a fire engine. And these maximums will be the very minimums with which the apparatus can get by. Hardly more than a half dozen fire fighting tools will constitute the equipment of each machine, and the inclusion of special features, such as cabs, may be barred entirely.

This stripping of apparatus will accomplish three purposes:

1. Reduce consumption of critical materials.
2. Speed up manufacture of apparatus.
3. Enable present builders of fire apparatus to meet the increased demand for apparatus.

It should be emphasized that the proposed standards are intended only "for the duration." After the emergency is over, fire apparatus builders can again furnish fire departments any types or styles of apparatus they may specify.

It is believed that fire department officials will approve the emergency standard apparatus as a fair compromise, and as a solution to the pressing problem of supplying additional fire protection at a time when critical materials are so sorely needed for the manufacture of war munitions and when industries, including even fire apparatus plants, are overcrowded with war work.

* * *

New Types of Bombs

Descriptions of new types of fire bombs now being used by the enemy were recently released by James M. Landis, Director of the office of Civilian Defense.

This is a commendable move, but a little tardy. Over a month ago Mr. Landis issued new instructions for handling incendiary bombs which, in brief, condemned the water spray and urged a solid stream for use on all fire bombs.

Because no reason was given for the abandonment of the spray, formerly advocated by the OCD, and the use of the solid stream in its stead, a great deal of confusion, and even resentment, resulted among fire department personnel.

Now that the explanation has been given, the need for the change in procedure in extinguishing incendiary bombs is apparent; the change will be willingly put into effect.

What puzzles us is why this information did not accompany, or precede, the revised instructions on handling fire bombs. The OCD must surely have known of the new bombs then. For data on these new incendiaries were in our hands nearly two months ago; a little later, an article on the same subject, prepared by our British correspondent, reached us without deletions by the censor.

If British authorities saw no need to conceal the information, why did the OCD feel it necessary to keep American fire fighters in the dark on this new development?

We surely hope that this latest release by the OCD marks the start of a new policy which will include the taking of the American fire service into its confidence.

Fred Shepperd

Wartime Hide and Seek

Concealment Technique During Daylight, Blackouts at Night Obscure Vital Sites

By Fireman EDWARD J. KEHOE*

THE old proverb says: "What you do not see will not bother you." However, when we consider camouflage and blackout from the viewpoint of our enemies, we can adopt as a new rule: "What they do not see, *will* bother them!" For example, if an enemy aviator can see one of our ammunition plants, he may be able to bomb it; if, on the other hand, he cannot see the plant, its production will sooner or later very definitely bother him!

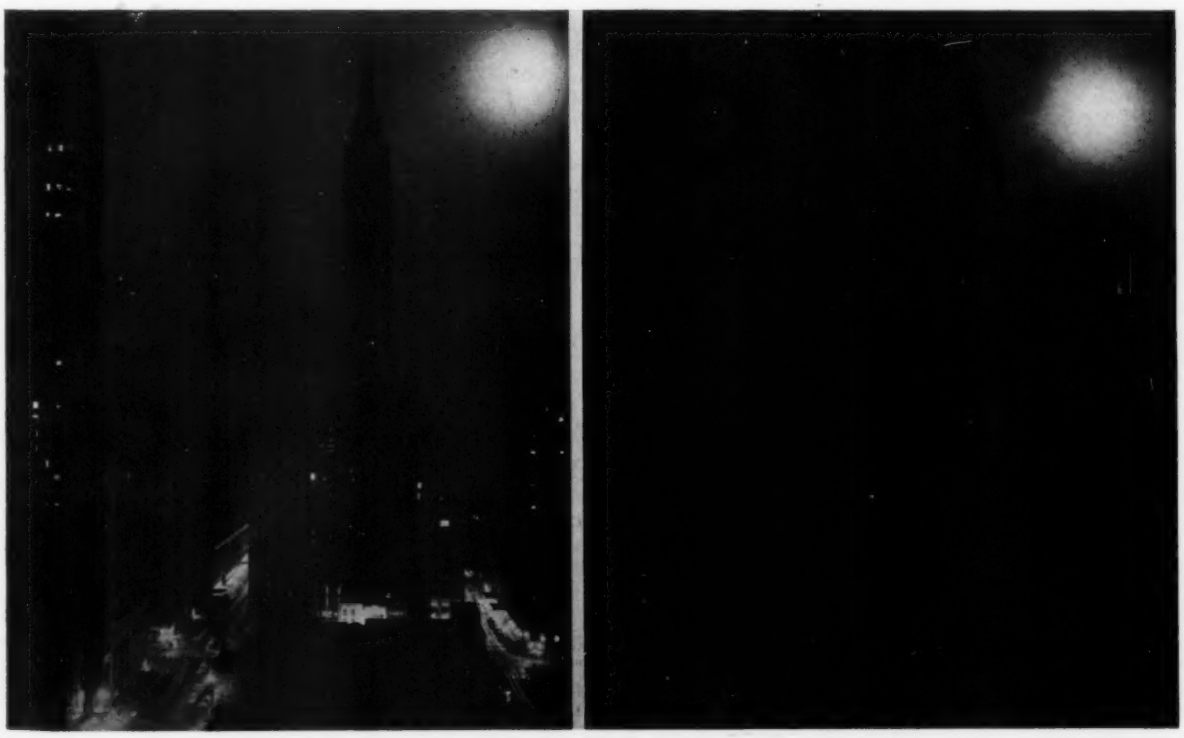
Many of us recall the grotesque looking camouflaging of World War No. 1 days. The basic principle, that is to blend a ship or a tank into its background, was sound, but the means employed, zig-zagging paint applied in a riot of colors, fell short of the purpose. A considerable amount of research work has been done since that time and a relatively new science has come into being, namely, "Protective Concealment," embracing the obscuration offered by both camouflage and blackout. Today, thinking in terms of defense against air attacks, and realizing that visual observation is essential for proper aiming of bombs, there is real merit in any scheme of concealment that reduces the enemy's visibility and confuses the identification of a vital site.

It is difficult for a person who is not an aviator to understand concealment from the airman's viewpoint. Many stores sell vast quantities of blue electric bulbs and blue flashlights, whereas the aviator knows that he can see blue lights much better than red! There have been cases where people have gone so far as to repaint the roofs of their houses from a flat red to a flat black, not realizing that both would look just about the same to a plane flying at 10,000 feet.

Bombardier's Problem

Dive bombers are used more for front line action than for civil and industrial areas. In precision bombing, wherein the plane levels off before releasing its bombs, even the most expert of bombardiers requires 35 seconds in which to adjust his bombsight. If his plane is traveling at 200 miles an hour, it will proceed approximately 2 miles during this operation. If, in addition, the plane's altitude is 30,000 feet, the trajectory will carry the bomb forward 2½ miles before it hits the ground. Therefore, if the bombardier sees his objective when 4½ miles away, he can barely

*Division of Emergency Fire Defense Activities. Reprinted by permission of the editor of WNYF, the journal of the New York City Fire Department.



New York Under War Lighting Conditions
Left: Dimout restrictions in effect nightly. Right: the same area during a recent blackout.

set the bombsight and release the bomb in time to hit the target. It follows, therefore, that if he is less than that distance from his target when it is sighted, he cannot possibly bomb it on that particular run.

What is more, it is only the most expert of bombardiers who require a mere 35 seconds to adjust the bombsight; a man who has been trained for one whole year needs 60 seconds, which in turn increases the 4½ miles to almost 6 miles. These factors, the oblique view of the target, the high altitude and the brief time available for adjusting the bombsight, work against the bomber and justify the use of disguises on important targets, thus injecting the element of guesswork into an otherwise exact bombing operation.

Purpose to Delay Detection

Concealment aims to blur factories, railroad yards, airports, etc., into the background. The intention is not to obscure the objects completely, but merely to delay their detection so that they will not be seen until the plane is too close to the target to drop the bomb. This forces the enemy to abandon the bombing entirely or at least to change from precision bombing with one plane to area bombing which requires many planes, thereby increasing the probability of plane losses through anti-aircraft action.

The obscurement is achieved more by the use of texture than by color and has to be applied carefully because, if overdone, it can be worse than nothing at all. In some cases, recognition from the air may be retarded by toning down bright surfaces and eliminating noticeable contrasts by uniform dullness. A second method of concealing a structure is to apply to it the characteristic pattern of the immediate neighborhood. For example, imitation streets painted across an extensive flat roof will create the illusion of parceling the building. The use of color by itself is frowned upon because it does not contribute greatly to the concealment and, what is more, may actually accentuate the object rather than conceal it if the plane gets low enough. Most ordinary flat paints are not flat enough for obscurement work.

The average cost of complete coverage is approximately two dollars per square yard. Accordingly, there must be economic and military justification for concealment before it is attempted. Concerning this, the Office of Civilian Defense says: "Each installation presents different problems. It is, therefore, important that concealment projects involving patterns, disguise, planting, or construction, be preceded by thorough planning. The advice and assistance of personnel trained in such work should be secured wherever possible. No camouflage at all may often be safer than camouflage ill-conceived."

Blackouts Essential

Concealment is employed to confuse the enemy by day and blackout does the job at night. Like concealment, blackouts must be approached scientifically. Experiments have been conducted at night near Cleveland, wherein planes carry men with exceptionally keen eyesight, who observe the visibility of test lights on the ground below. In one of the trials an observer in a plane, flying at 10,800 feet, was actually able to detect the light of a match! Research has evolved some valuable data, such as the fact that red blackout lights are more helpful on the ground and much less likely to be detected from the air than blue.*

Army engineers, in cooperation with General Electric's research laboratories, have developed a small blackout bulb that is all black with the exception of a small orange-red circle about the size of a nickel on the bottom. One such bulb will illuminate a room sufficiently so that people, doors, windows and furniture can be plainly seen and, provided that no other source of light is present, there will be no need of purchasing special blackout drapes and shades. If just ordinary household drapes and shades are used, the light cannot be seen from the air. The bulb is awaiting official approval of the Army and will sell for about 25 cents.

London, of course, has had to maintain continuous blackouts and the reduction of illumination attained is excellent. Illumination is measured in foot-candles. The illumination provided by sunlight at noon on a bright day is about 10,000 foot-candles, while good street lighting at night furnishes 1 foot-candle. The blacking-out achieved in London is approximately 2 ten-thousandths of 1 foot-candle! Vehicles in London, including fire apparatus, use 4 candlepower bulbs in white headlights and 2 candlepower bulbs in red tail lights, all being protected by a louvre type blind. Candlepower should not be confused with a foot-candle, a more powerful unit of light measure.

Blackouts in large cities, especially in New York, present many problems. For example, crime and traffic accidents, the impossibility of blacking-out such geographical features as bodies of water, and the great difficulty of blacking-out every individual plant and private home, are only a few of the things which must be considered.

A complete precautionary 8 to 10 hour blackout night after night for New York would seriously hinder production, would inconvenience the populace and would not be too effective because of the water surrounding New York. Such a complete blacking-out would probably only be employed during an actual air raid, or when a raid was imminent.

Dimouts Effective in Reducing Glare

A "dimout," which consists of extinguishing all unnecessary lights, is very effective in reducing the glow of the city lights, without bringing about production stoppage and all the other disadvantages of a complete blackout. The sooner the glow is eliminated the better. The Army's present plan of progressive dimouts, wherein more and more unnecessary lights would be extinguished each night, will achieve the desired results.

Smoke and artificial fog are still in an experimental stage but they seem to possess fair possibilities of eventual use for concealment. In England, smoke has been tried on moonlit nights with satisfactory results. The main value of this method lies in the fact that when it covers a factory, or other site, it presents about the same sheen to moonlight as the surrounding ground, when viewed from the air. Unfortunately, the process is rather expensive because the smoke dissipates quickly.

An extreme attempt at concealment was reported by a newspaper man recently returned from Germany. Fearing a massive air attack by the United Nations, perhaps in retribution for the "blitzes" on English cities, the account states that German technicians have constructed, in five separate open areas, cardboard facsimiles of the metropolis of Berlin. These artificial cities imitate, in every minute exterior detail, the topography of the real Berlin. They even contain reproductions of well known armament factories, probable targets in crippling attacks on military objectives. Aiming at thorough deception, these gigantic decoys house huge piles of loose straw and wood, electrically wired for rapid ignition, so that bombardiers will readily see an exaggerated degree of damage and falsely report the city's destruction by fire.

*Editor's Note: In the original issues of the Office of Civilian Defense pamphlet entitled "Blackout," blue lights were favored, as in paragraphs 39 and 86 of that publication. Subsequent issues contain an "errata memorandum" wherein the prescribing of blue lights is deleted.

Practical Training for Auxiliary Firemen

By FRED SHEPPERD
Editor, FIRE ENGINEERING

IN this installment of the series of articles on "Practical Training for Auxiliary Firemen" are discussed additional tools used in forcible entry work and how they are manipulated.

Tools for Forcible Entry

Q. Describe a Callahan door opener.

A. A Callahan door opener is a lightweight door opener consisting of a rod, fitted with a handle on one end and claws on the other, such as are used for pulling nails.

CALLAHAN DOOR OPENER

Q. How is the Callahan door opener used?

A. It is employed in very much the same manner as the buster bar and jimmy, the pointed end being inserted between the door and jamb, and the handle forced inward. Where the door swings outward, then the pointed end is placed between the door and the jamb, and the handle is pulled outward, springing the door away from the lock.

This is a comparatively light tool, and is satisfactory only for opening light doors and windows. The tool can be used for forcing windows by inserting the point beneath the windows and pulling the handle out.

Q. What is a battering ram?

A. A battering ram is a heavy tool for forcing solid doors and for breaching brick walls. It consists of a large bar fitted on one end with a ball-shaped battering head and with a wedge-shaped claw at the other end for removing bricks. Cross handles are provided to aid in operating the device.

Q. How is a battering ram employed?

A. The main function of a battering ram is making holes in walls where there are no openings through which to get in hose lines. For example, in the center of a long brick building, blind on either side, and wherein a fire is raging, lines would be very effective half way along the wall. The method of operating the tool is as follows: Remove a brick about three feet up with a pike axe or pick. With four men on the handles of the tool and the fifth on the end, if necessary, get the ram swinging with the forked end toward the building and strike out a brick. In striking out the brick, the working end of the tool is brought upward with a swing just as it strikes, so that the brick is lifted up and inward. Driving out one brick at a time, remove enough bricks to make a hole sufficiently large to accommodate the line. Just as soon as the hole will permit, the line may be placed in action. This appliance is also used for battering in doors, but the butt end, or ball end, is used for this purpose. Incidentally, if no battering ram is available, a twenty-five or thirty-foot ladder may sometimes be used instead. In using the battering ram on doors, strike a solid part of the door near the lock, for if a panel is struck, it is readily knocked out without the door opening.

Battering Ram

Q. Describe a rivet cutter.

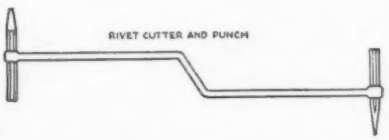
A. A rivet cutter consists of a cold chisel fastened in a heavy wire holder, permitting a man to hold the cutter at a distance of a foot or two away.

Q. For what is the rivet cutter used?

A. While the rivet cutter as described above was originally designed for cutting out rivets on iron shutters, trap doors in front of buildings, etc., its chief use developed into cutting holes through concrete flooring preparatory to the use of cellar pipes. It is still used to a limited extent for cutting rivets and also for opening up heavy plank floors. Where the tool is to be used for cutting concrete floors, the proper method to employ it is to first locate the center of the space between floor beams. After locating this point, the hole should not be made any larger than is absolutely necessary to accommodate cellar pipe or other appliance to be employed. The cutter is used in connection with sledge or flat head axe.

Q. What is a combination rivet cutter and punch?

A. A combination rivet cutter and punch is an appliance consisting of a bar provided with an eye at either end. In one of the eyes is fitted cold chisel or rivet cutter, and in the other end, punch for driving out rivets after heads have been cut off.



Q. How is the combination rivet cutter and punch used?

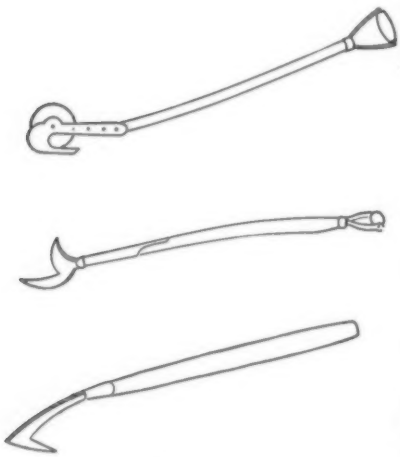
A. This tool is commonly employed for splitting planks to get a locked bolt out. The first step is to observe the grain of the wood and place the chisel in line with the grain and directly above or below the bolt. Drive it in with the back of an axe until the plank opens up and the bolt can be removed. The chisel is used to a great extent in cutting off bolts in metal trap doors, such as are found on covers of stoke holes.

In opening up such doors with the chisel, a great deal of labor can often be saved if the master bolt

is cut off first, for the lock is usually locked through an eye bolt and the master bolt head is the terminus of this eye bolt. By cutting off the rivet end of this master bolt, it can be driven inside of the trap door by using the punch on the other end of the tool and the door will immediately open up. The chisel can also be used for cutting metal doors found on the rears of theatres, and where there is no other method of opening them up. This tool is used in connection with a plain axe or sledge. The master bolt of shutters or stoke hole covers usually appears as an extra on the cover, the balance being arranged in rows.

Q. What is a tin roof cutter?

A. A tin roof cutter is a tool used for cutting the tin on flat roofs.



Roof Cutters

Q. Describe the various types of tin roof cutters commonly used.

A. There are three types commonly used. The first consists of a handle provided with a cutting wheel and a hook on the end. This wheel, sliding against the hook, provides the shearing operation for cutting the tin. The second type consists of a blade pointed away from the handle, and which operates by forcing the point of the blade under the tin and pushing the cutter along the roof, cutting the tin in the operation.

The third type has a blade pointed toward the handle, and in this case the tin is cut by pulling the tool along the roof.

In all cases, the cutting point of the tool is driven through the tin on the roof, and after the tin has been raised a little from the roof boarding below, the cutting operation may be performed.

The tool which operates by drawing the blade along is probably the more satisfactory in that the operator can operate with his back toward the wind. This prevents the necessity of punishment by smoke and hot gases which may come up as soon as the tin is opened. They will be carried from the direction of the operator. As a general rule, keep the back of the cutting blade parallel with the roof, or otherwise the point will catch in the board beneath the tin and hinder progress. When the tool sticks, raise up the handle to free the point, and then resume operation.

These tools are used for effecting forcible entry through the roofs of buildings for ventilation or other purposes.

On gravel roofs, where the gravel is placed on tar on top of the tin, the gravel is usually scraped off with a shovel before the cutting tool is employed.

Use of Forcible Entry Tools

Q. What is the first step to take in gaining entrance to a building?

A. Try the door first. It may not be locked. Frequently doors have been damaged through forcible entry operations when they were not locked, but merely stiff in operation.

Q. If a door is locked at a fire, and it is one which may afford considerable difficulty in opening, is there any alternative step to forcible entry?

A. Yes. It is sometimes possible to gain entry to the building such as through the second floor windows, and open the door from the inside. This operation is normally carried out only if there is sufficient time to perform this evolution, and if this method of gaining entry would be quicker than forcing the door.

Q. Are there any other alternatives besides gaining entrance in this manner?

A. Yes. Frequently in large establishments, watchmen, janitors, or others, may be present. If they can be summoned, they may have keys and can open doors without the firemen resorting to forcible entry.

Q. What is the first essential in efficient forcible entry work?

A. To know the types of doors likely to be encountered, the types of locks employed, and the proper methods of forcing such doors and locks.

Q. What are the different types of doors which may be encountered at fires?

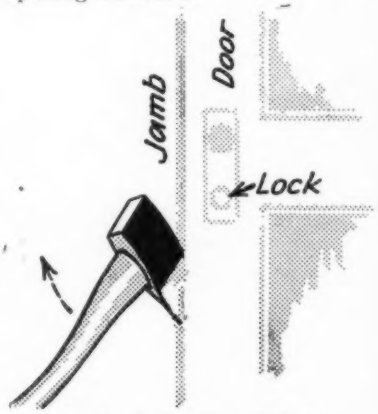
A. Hinged doors (single); hinged doors (double); revolving doors; sliding doors (single); sliding doors (double); folding doors; vertical, metal, fire doors; elevator doors to various floors and which are locked; vertical rolling doors; iron shutters; trap doors (metal); glass store doors; entrance gates on buildings; wood or glass panel doors.

Q. What other openings may have to be forced at a fire?

A. Gratings, dead lights, scuttles, window bars and screens, and windows.

Q. In what ways may a hinged door (single) be forcibly opened?

A. If the door is not of a heavy construction, and if the lock is an ordinary one, the axe is probably the most commonly used tool for forcing the door. The blade of the axe is forced between the door and the jamb, either directly above or below the lock, and the handle is forced away from the door. This operation will usually spring doors opening outward.



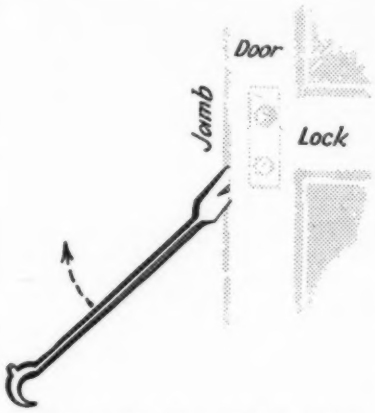
Opening Locked Door With Axe

If the door opens inward, then the handle must be forced toward the door to spring the lock.

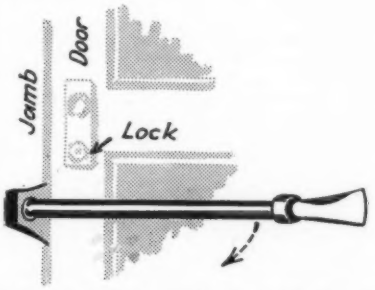
The claw tool may be also used for this operation. The fork of the claw tool is forced between the door and the jamb, and if the door swings outward, the claw tool is forced away from the door. If the door swings inward, then the tool is forced toward the door.

As the fork of the claw tool is thicker than the blade of an axe, it may prove more difficult to force the tool into the crack be-

tween the door and the jamb, than is the case with the axe. However, an axe may be used for driving the tool into the crack, if necessary.



Opening Locked Door With Claw Tool



Opening Locked Door with Lock Breaker (Kelly Tool Used in Same Manner)

The lock breaker and the Kelly tool are very effective for opening this type of door. They have thin blades, and a head which enables the point to be driven readily into the crack. If the door opens outward, the handle of the tool is placed across the door and the adz point of the tool is set in the crack. It can be driven in as far as necessary with the flat head of an axe or maul. After this has been done, the handle of the tool is pulled outward, and the door readily springs from its locked position.

If the door swings inward, the flat end of the tool, rather than the adz end, is used. This operation is very much the same as using the forked end of the claw tool. After driving the point in between the door and jamb, the tool is forced toward the door which forces the door inward and free of the lock.

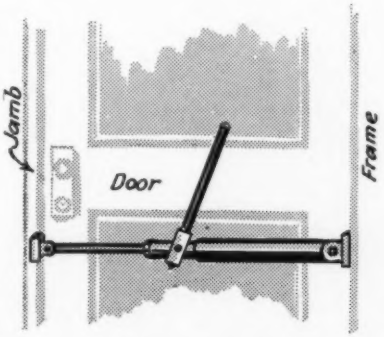
Lighter doors may be opened readily with a buster bar or jimmy. Both of these tools operate in about the same manner. The point of the tool is forced in the door and forced away if the door opens outward. If the door opens inward, it is forced toward the door, springing the door inward.

Hale, Detroit and Pirsch door openers are effective tools for forcing doors inward. As described in a previous question and answer, the compression piece of the door opener is placed underneath the lock, and a firm footing secured for the tool. With the Hale door opener, the lever arm is worked up and down which causes the extension rod to force the door. With the Detroit and Pirsch door openers, the operation is a lever motion, the raising of the handle imparting pressure to the compression rod, which forces the door.

Callahan door openers are also satisfactory for opening the lighter doors, and it is used in somewhat the same manner as the buster bar and jimmy.

Occasionally the Hale door opener may be employed for freeing a door by placing the tool across the doorway with the compression piece alongside the lock. As the handle is operated, the compression piece, which is against the jamb of the door, forces the jamb away from the door and thus frees the lock.

If the door is of heavy construction, and if the previously described tools will not accomplish this task, it may be necessary to employ the battering ram. In using the battering ram, two men

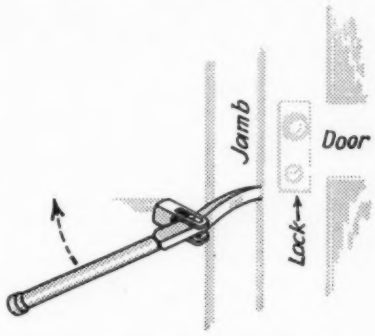


Using Hale Door Opener to Force Jamb Free of Lock

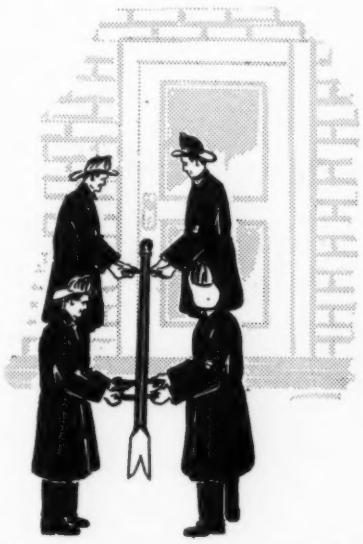
are placed on either side of the ram, holding the cross pieces which are fitted through the body of the ram. The ram is given a swinging motion, with the round end toward the door, and this end is driven against the door just beneath the lock.

It may take several strokes of the ram to force the door.

In the event of particularly difficult door to open, a fifth man may work at the forked end of the ram to give added drive.



Opening Locked Door with Buster Bar



Using a Battering Ram to Open Locked Door

Great care must be taken to see that the round end of the ram strikes the door and not the panel, for the panel would be driven in and the door left standing. However, it may be necessary, in certain instances, to drive in the panel to gain entrance and open door from inside, although some doors will be just as hard to open from the inside as the outside, and nothing would be accomplished by this additional work.

If the door is bolted, or both doors locked, it is possible that none of the above methods will give results, with the exception of driving in the panelling to reach the bolt on the inside.

New Incendiary Bombs Require New Technique in Fire Fighting

By ERIC HARDY,
Liverpool, England

IN a number of recent air raids upon Britain the Germans have been using a phosphorus-containing explosive, incendiary bomb whose material will continue to burn as long as it is exposed and will only stop when under water. This means new methods of fighting such incendiaries and especially where they have ignited the clothing on persons.

Several new types of German incendiary bombs were introduced during the summer of 1942. One is an ordinary kilogram incendiary bomb with a more powerful explosive charge than before, fitted with an extension to the nose instead of the tail. It may be up to five minutes between the ignition of this bomb, after falling, and its explosion. It weighs five pounds and is seventeen inches long without the tail, but the explosive extension sometimes breaks off and explodes separately. As these bombs drop from their containers, they release a thin eighteen-inch wire attached at one end to a metal disc two inches in diameter and this may be picked up some distance from the incendiary bombs.

Penetration of Bomb Greater

To deal with this type of fire bomb, it is not safe to be nearer than twenty yards even when lying down, and unless it has fallen where it can start a fire (as in a building) it is best to leave it alone for five minutes if it is on open ground. In buildings it penetrates further than the "common or garden" incendiary bomb and fire fighters need some cover until the high explosive portion detonates. The cover required is a brick wall, not a plaster and lath wall, and the bomb should be fought with a jet-spray which gives more success than sand bags. Unignited "duds" should be handled with care and stored for the time being horizontally.

Bomb Contains Rubber

The fire bomb containing phosphorus oil also contains rubber, and is in a casing that looks like the old fifty-kilogram high explosive bomb. It splits open by the usual type of fuse so that it scatters its sticky liquid contents up to thirty yards' distance and the contents ignite spontaneously. In fighting this bomb the same amount of cover is required until it has burst and it can be fought with both water and sand, but especially water. Clothing or equipment splashed with the liquid must be kept thoroughly wet until removed, because the phosphorus will reignite when it dries out. If any liquid lodges on human skin, the affected area must be kept in water or kept soaked with a saturated wet pad and medical first aid treatment obtained immediately. A handy first aid treatment to remove the phosphorus from the skin is a liberal sponging with one tablespoonful of washing soda solution in a pint of cold water. Dry sterilized dressing is applied to burns from these bombs, and not any grease or ointment which will only spread the phosphorus.

Another type is a new combination of high explosive and incendiary bomb in the same casing as the old fifty-kilogram high explosive. First of all, after coming down, it throws out six pre-ignited firepots of the magnesium electron type, each shaped like a large tumbler, two and a half inches at the base, three and three-quarters inches in diameter at the top, five and three-quarters inches long, together with some sixty metal containers about two and a quarter inches long and of triangular sections about one inch wide containing a thermite type of filling. This is followed immediately by the detonation of a twelve-pound charge of TNT in the nose of the main bomb. The secondary parts do not contain explosive.

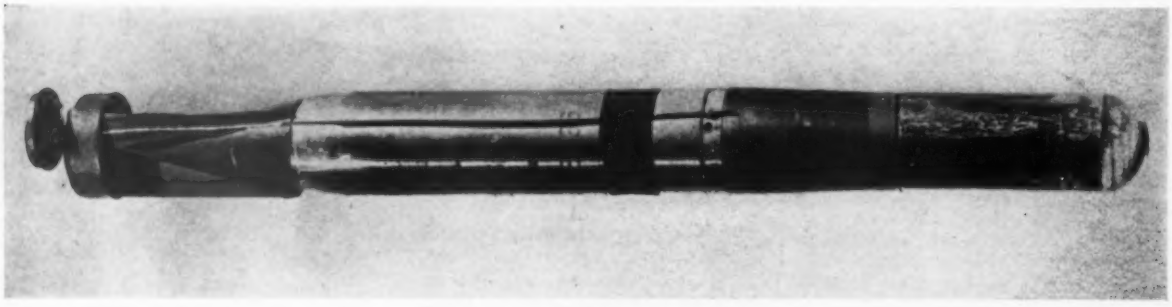
When heavy air raiding takes place in the future, it is quite possible that many new types of fire bombs will be used by the enemy and the fire fighting must keep pace with these changes by up-to-date training.

In the cities, the fire force should be given a trial in which the town's mains are supposed to have been bombed completely out of use, and where several big fires, some requiring 2,000 gallons of water a minute, have to put out with emergency supplies taken from a local river, canal or other source. Anything less than that is not blitz training.

Rescue Work by Fire Service

The rescue of persons from burning buildings has become primarily the job of the fire service, not the first aid parties. They should be trained in this work. They will have to cooperate with the rescue squads when people are trapped in the debris under a wrecked building. They should also be trained in methods to prevent unnecessary damage by water to foodstuffs, and where cellars or basements are involved, care must be taken to keep these as clear of water as possible until it is certain that all trapped casualties in such situations are released and removed. These lessons were only learned by the cruel school of experience in this country. It may be wondered how, in the dark, it can be ascertained that fire bombs contain phosphorus, or not. This material is easily seen in the dark and it has a characteristic smell.

In warehouses, there is serious danger



The New German Explosive Fire Bomb

This is the new German explosive fire bomb. It is in the form of an ordinary one-kilogram incendiary bomb with a three and a half ounce charge fitted on an extension to the nose. The fuse lights the incendiary contents immediately on contact with an object or the ground, and also ignites a slow match fuse to the nose. The detonation of the explosive charge may be delayed some minutes after the fire bomb itself has ignited. The over-all length of the bomb is about twenty-one inches; diameter about two inches and its weight is nearly five pounds.

of fire after a high explosive bomb has dropped nearby and shaken the warehouse, because of the disturbance of dust, especially grain dust, which may cause explosion and fire similar to some of the explosive fires in grain mills and elevators. Stone dust will not ignite in this way, but the dangerous dusts in buildings which may fire when a high explosive is dropped nearby include flour, sugar, starch, cocoa, rice meal, cork, malt, grain and tea.

No "Passing the Buck"

The organization of a wartime fire service cannot be based upon any old-fashioned parish pump fire brigade, for in the sudden emergency of a fire blitz, the town is saved or lost upon what was planned and practiced before the raid. The fire service stations should be grouped under sub-divisional stations, the latter grouped under divisional stations, which in turn are grouped under fire force headquarters which come under the regional headquarters. This gives a direct and easily invoked sequence of responsibility for prompt action and leaves no chance to "pass the buck."

If there is a fire call, the station receiving the report supplies the engine or trailer pump, and the officer in charge is responsible for using his fire fighting appliances to his best advantage, but each stage of action is reported to the sub-divisional station to which it is responsible. The officer at the sub-divisional station is responsible for covering all fires that are fought by stations in his area; that is, he must be ready to meet their needs for extra equipment if fires become too numerous, and without reference to his divisional station he can redistribute equipment from other inactive stations in his area to meet the emergency.

A nation-wide system of lettering and numbering assures the identification and return to the right station of equipment after such a fire. Each fire area has its distinctive lettering and each division area its distinctive number, each subdivision its letter, and each station its number, and the combined use of these is like a motor car registration but more quickly utilized.

To give an illustration of how fire fighting knowledge is constantly changing during the war, the British Government issued an A. R. P. instructors' handbook on "Incendiary Bombs and Fire Precautions" in 1939. It had to amend it in June, 1940. It had to completely rewrite it in 1942, and to issue another book on fire protection.

British Trailer Pumps Are Readily Moved by Hand

RINGS ON FIREMEN'S FINGERS OFTEN THE CAUSE OF INJURY

New York Medical Officer Points Out The Hazards of Wearing Rings on Duty

By John J. White, M. D.*

WE firemen are more addicted to the practice of wearing rings than the average man outside the department. Perhaps a psychologist in explaining this flair for finger jewelry would blame it on the simplicity and absence of flashiness of our uniforms, creating a desire for some legitimate adornment; the usual lapel emblems being too conspicuous, what is more natural and harmless than a ring! Whatever the reason underlying the habit may be, our custom of sporting rings while on duty, one or more on each hand, often is the direct cause of damage to fingers or frequently aggravates an existing injury. Let the experiences of the Fire Department Medical Officers expand on this thought.

An engineman rapidly pulling hose off the wagon for operating at a fire in the rear of a store, unfortunately gets his ring caught by one of the lugs of a butt. With the next quick tug the ring rips off most of the surface flesh clean off the finger. A truckman wedges his clawtool under a window sill, puts his full strength behind a downward push. The tool slips, catches under his ring and the finger is severed completely off the hand. Another truckman, after climbing a yard fence, sets his grip to drop to the other side, failing to notice the nail wedged under his ring. He drops, leaving a finger at the top of the fence. Extreme and unusual cases, but actual ones!

Or, consider the more frequent type of finger injuries, lacerations from broken glass, deep cuts from jagged tin. If the finger is adorned with a ring, the removal of the jewelry is a difficult job for the doctor and a painful experience for the patient.

*Medical Officer, New York Fire Department. Reprinted from "WNYF," the journal of the New York Fire Department.

Chemical Reaction to Gold

Perhaps the interne, or nurse, administering emergency treatment in the hospital, being inexperienced in the effects of rings on a wound, treats and dresses the injury without first removing the ring from the finger. What happens? The iodine used in cleaning the cut gets under the ring and by a chemical action forms an iodide of gold, burning a circle of flesh right out of the finger. Men even report to the Medical Office with splints applied to a ringed finger. Filing a ring off a finger, swollen because of lacerations or because of broken bones, really hurts.

Infections of the hands or arms cause a swelling of the fingers, from which rings should be promptly removed, or else the subsequent job of removal will be difficult. Bichloride of mercury, ordinarily applied to swellings and lacerations, reacts chemically with gold and silver alloys to form a caustic and harmful acid. Special care should be exercised at chemical fires because medical examinations following such fires have discovered ulcerations caused by chemical bits under rings.

Therefore it is recommended that all firemen, as a measure of safety, remove all rings when going on duty, without waiting until responding to a fire. Such a precaution might be the difference between ten fingers and nine.

O.C.D. ISSUES INFORMATION ON NEW TYPES OF INCENDIARY BOMBS

Use of Direct Stream of Water Necessary to Control Incendiary Bombs Now Used by Axis

THE Office of Civilian Defense in Washington has issued the following instructions for the control of the new incendiary and anti-personnel bombs used by the enemy in recent raids:

1. The enemy recently has employed new types of bomb—both large incendiaries and the usual small type with a more powerful explosive charge set off by a time fuse. Experience with these bombs in other countries and our own study of the techniques developed to cope with them make it clear (a) that fire continues to be a most important weapon and (b) that, against fire, water is still the best weapon. When heavier, delayed-action explosive charges are added, they are primarily intended to hold off attack on the fire until it has gained dangerous headway.

2. New types of enemy incendiary and anti-personnel bombs are:

a. The usual 2.2-pound fire bomb, with an extension of the nose containing a larger explosive charge. The total weight is increased to five pounds. The bomb is 17 inches long without its tail, or about 21 inches long over all. The incendiary section of the bomb ignites upon landing, but the explosive charge may go off at any time up to seven minutes later. It would be possible to increase this lapse of time without major alteration of design, so that there can be little dependence upon the present time interval. The explosive part may become detached, but this does not lessen its effectiveness. This type of bomb has been employed by the Germans.

b. A combination incendiary and high explosive bomb, in a casing the same size and shape as the 110-pound high explosive bomb (about 30 inches long and 8 inches in diameter). On impact it throws out 60 small metal containers with thermit-type filling and six larger tumbler-shaped fire pots containing a magnesium-type filling which is pre-ignited. Almost immediately after ejecting the incendiary units, a 12-pound charge of TNT in the nose of the bomb explodes.

c. A phosphorus-oil bomb in a casing similar to that of the 110-pound high explosive bomb, but containing only the usual type of fuse to split the casing open on impact and scatter its sticky liquid contents. The contents ignite spontaneously because of the phosphorus. The phosphorus may be extinguished by water but will break into fire again if allowed to become dry.

d. A Japanese bomb weighing about 110 pounds and containing, besides a quantity of thermit, a considerable number of rectangular-shaped rubber-impregnated incendiary pellets which scatter widely and start a substantial number of small fires which may be attacked immediately.

3. The most effective method of attacking fires caused by these bombs is the same as was outlined in revised instructions last July concerning the ordinary magnesium-thermit type of fire bomb—a jet or direct stream of water. The small fire bomb without explosive charge is still the most widely used of all types except by the Japanese. If bombs fall where they cannot start fire and cannot be seen from the air, they should be left to burn themselves out, but elsewhere they must be attacked. The bombs without heavy explosive charges or those which explode upon impact present only the problem of dealing with fire and thus require no additional instructions.

Attacking Fire Bombs

4. The small fire bomb with delayed-action explosive charge requires a revision of instructions concerning the types of cover that provide full protection from the blast.

a. A brick wall four and one-half inches thick is considered *full* protection gainst the explosive charge now being used with a time fuse in small magnesium bombs. In walls built of outside bricks of the best quality, a three-inch thickness will prevent penetration. Lath and plaster walls, wooden doors, tables or chairs do not offer full protection from the explosion of this charge. Personal risk may be greatly reduced by assuming a crouching or prone position behind the best available cover.

b. Where fires are likely to spread rapidly—as in congested districts and where there is relatively little fireproof construction—even bombs which may explode should be attacked promptly from behind the best available cover. Care should be exercised to expose no more than one hand while playing a stream of water on the area surrounding unexploded bombs, but this risk is considered necessary where unchecked fires might start a conflagration. Water may be thrown from a small (or one pint) container, dipping from a larger container, if a pump has not arrived. Although less efficient than a jet of water, this method may permit the wetting of inflammable material within range of the bomb. Water should be thrown from a crouching position from the cover of a solid wall, as in other methods. In this case the water need not be thrown on the bomb itself.

c. Use of a jet of water enables the operator to work at a much greater distance than the "short-range" methods employing sand, other smothering agents, or a spray of water. Sand in the form of bags or mats cannot be depended upon, because these bombs, upon explosion, have a greater fragmentation effect than the explosive incendiary bombs formerly used. The public should be warned against

Seventeen Freight Cars of Gasoline Burn

Workmen clear debris from the Baltimore and Ohio railroad tracks near Bellaire, Ohio, on October 7, after fire destroyed seventeen box cars loaded with fifty-gallon drums of aviation gasoline. Damage was estimated at $500,000. Repairmen said approximately a quarter of a mile of track was melted like butter. Firemen were unable to fight the blaze because of the intense heat.

the use of all such smothering agents as "bomb extinguishing" powders; also against such devices as scoops, grabs and snuffers. They are entirely without merit and may endanger the lives of persons who depend upon them. The use of spray and sand is no longer recommended because the possibility of fragmentation makes it too dangerous to approach the bomb sufficiently close to apply them.

d. The new types of bombs increase the importance of storing water in the home, as heavier explosive charges and larger bombs make it even more hazardous to depend upon normal water service. (Containers previously used for sand should now, if possible, be used for water.) It should also be pointed out that water storage tanks used in connection with water heaters, hot water or steam furnaces or other home equipment may be useful, if they can be drained quickly. The location of the drain valve should be marked so that it can be found promptly in the dark.

Thorough Search of Premises Must Be Made

5. A thorough search of the premises should be made after every raid. Any unexploded bombs should be reported promptly to the bomb reconnaissance agent for inspection. Where phosphorus-oil bombs have been used, all areas touched by the oil should be kept wet until proper authorities have examined them to see whether phosphorus is present. Physical contact with fragments of such a bomb or any ground or equipment splashed with the liquid should be avoided.

Methods of Attack Must Be Changed

6. These developments in enemy air attack mean that the forces of workers trained to deal with all types of bombs must be increased as rapidly as possible. Plans for recruitment and training of such an expanded force may be expected at an early date. Methods of attack may be changed frequently. Such changes may be even more rapid as our enemies desperately seek to incite fear in civilian ranks, but they should serve only to intensify our efforts to develop a large, alert and well-trained force that is ready for any challenge.

Former Chief Kennedy Dead

Fred Kennedy, former Chief of the Indianapolis, Ind., Fire Department, died on September 25.

Appointed to the department in 1911, Chief Kennedy drove horse-drawn fire apparatus and in the ensuing years he held every rank in the service. In 1916 he was promoted to lieutenant, in 1919 he became a captain and in 1922 he was advanced to battalion chief. Six years later he was appointed first assistant chief, and on January 2, 1935, he became chief.

Sometime ago he relinquished his title of Chief and was returned to the rank of captain, which he held at the time of his death.

NAVAL AIR STATION MAINTAINS EFFICIENT FIRE DEPARTMENT

"Sailor" Firemen from Alameda Naval Air Base Train for Eight Weeks at San Francisco School

By Bob Greenock*

IN days gone by, a "fireman" in the Navy was a member of the "black gang" that helped pile up steam in the boilers of battlewagons, but that definition is outmoded in these days of modern warfare.

Take the Navy's firemen stationed at the Alameda Naval Air Base in San Francisco Bay. They certainly do a lot of things, but tending boilers on a battlewagon is not included in their duties.

For under the direction of Chief Boatswain's Mate H. A. Benthusen, Fire Chief at the Naval Air Station, these men perform the duties that are common to the firemen of any large city.

When the station was installed nearly three years ago, one of the first considerations was adequate fire protection. Chief Benthusen was called back from retirement to take over. During retirement he had been assisting the fire department at McClelland Field, Sacramento, an Army base.

The department at the Naval Air Station consists of an undisclosed number (because of censorship restrictions) of trucks including pumpers, ladder trucks and crash trucks. All of them are equipped with foam, carbon dioxide and water extinguishers. They are all of the cannister type, carried on the seaman's back. In addition, great quantities of foam are available for use by the pumpers.

The present department is built around a nucleus of eighteen men who were trained by the San Francisco Fire Department at its modern drill tower

* Material for the following story was compiled with the aid of Ensign Kenneth E. Leake, Public Relations Officer attached to the Alameda, Calif., Naval Air Station. All photos are official U. S. Navy photographs.

Series of Streams Being Played from San Francisco Fire Department Drill Tower Where Sailor-Firemen from Alameda Naval Air Base Were Trained for Eight Weeks

and school with the aid of Chief Charles Brennan.

Those men in turn trained new members of the department in ventilation, respiration, plane rescue work, operation of gas masks and rescue breathing apparatus, fire hydraulics, gas, oil plane fires, etc.

Chief Benthusen is assisted by Francis Arbuckle, Machinist's Mate, First Class.

Plane Crash Fires

Chief duty of the fire department at the Naval Station is to take care of plane crashes. The department's first job is to get the pilot out of the plane, then extinguish the fire. When a truck is called for a plane crash the men on the truck wear asbestos suits and are prepared on arrival to immediately go into the fire to rescue the pilot. All Naval Air Station firemen are picked with a view toward their bravery in face of danger.

The buildings at the station are all new and very modern. They are concrete and consequently do not constitute a fire hazard, as do the wooden buildings of so many military camps. Sea and land plane hangars are equipped with sprinkling systems that will flood the hangars in thirty seconds.

There is a station order against non-safety matches, which are called "court-martial matches." The introduction, possession or use of any match that can be lighted in any way other than by striking it on the abrasive material attached to the match container is strictly forbidden by Captain Frank R. McCrary, Commanding Officer.

In addition to the fire trucks, each building is equipped with apparatus auxiliary to the sprinklers. Ladders, pails, hand extinguishers and other equipment are widely distributed.

The Navy, always noted for doing a good job, is proud of its fire-fighting equipment and ability at the Alameda Naval Air Station.

Chief Moran Dies

Former Fire Chief John C. Moran, a member of the Hartford, Conn., Fire Department for more than fifty years, twenty-three of which were spent as Chief, died on October 13. He was seventy-seven years old.

Chief Moran as a boy went to every fire within his section of the city, and was appointed a substitute fireman on February 16, 1886. On January 6, 1887, he became a regular callman.

He was made a regular on August 20, 1895, and on June 28, 1899, he was made engineer at Company 4, where he had charge of the self-propelled steamer, at that time the largest self-propelled fire engine in the world. On October 15, 1908, he was made second deputy chief. On May 1, 1912, he was advanced to first deputy chief and on November 1, 1913, he became chief.

The Late Chief John Moran

While he was a deputy chief, he was sent to New York to attend the Fire College and to study the methods used, and when he became chief in Hartford, he organized the local drill school.

During his career as fireman and chief he saw the introduction of chemical equipment and of motorized equipment. He was instrumental in the introduction of the central fire alarm system, the two-platoon system, and of the fire prevention program. During his time, the old lock couplings for hose were eliminated and standard couplings installed throughout the department.

He was the inventor of several pieces of fire fighting equipment which have been widely adopted by other departments. Among these are the "Hartford cellar pipe" and "combination set."

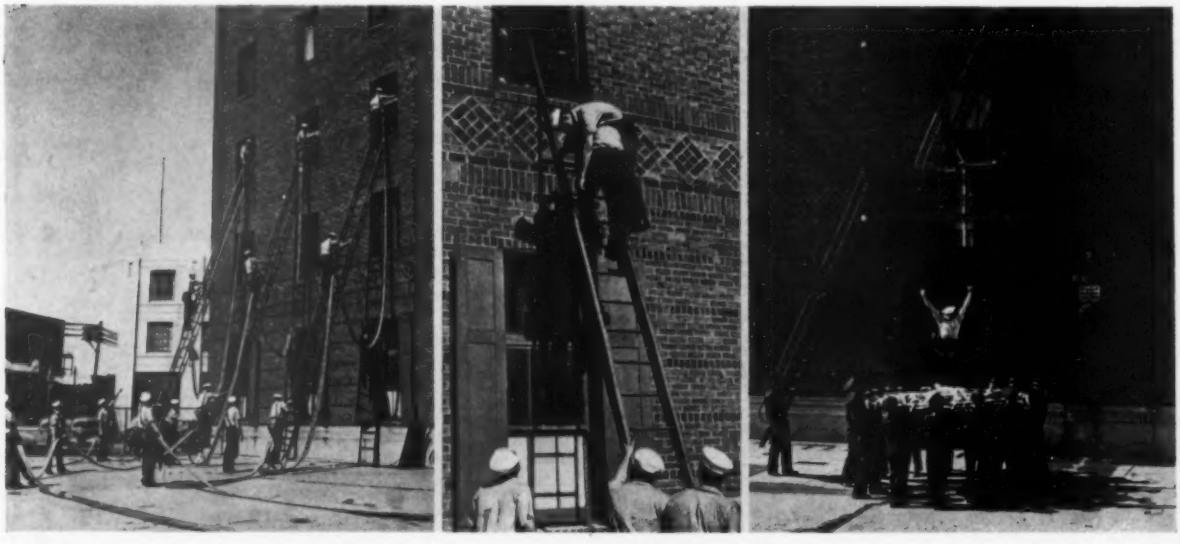
In 1923 Chief Moran was chosen President of the New England Association of Fire Chiefs, and in 1934, President of the Connecticut Fire Chiefs Club. He was a long-time member of the International Association of Fire Chiefs.

On June 24, 1936, he was presented a framed testimonial in recognition of his fifty years of service by the New England Association of Fire Chiefs, and on April 23, 1937, following his retirement, he was given a certificate of thanks voted by the Board of Aldermen of his city.

Roi Woolley with the O. C. D.

Roi B. Woolley, former Assistant Chief of the Larchmont, N. Y., Fire Department, and father of the Westchester County Fire Chiefs Emergency Plan, has been appointed Chief of Fire Defense Organization and Coordination Unit of the Office of Civilian Defense, the appointment effective on Oct. 15.

Mr. Woolley is well qualified for this work as he has served as a research engineer as well as having had wide fire experience.



Evolutions at the Drill School

Left: Sailors practice leading in. Chief Charles Brennan of the San Francisco Fire Department arranged for the training of the men. The San Francisco Fire Department has one of the best drill towers in the country and firemen at many of the military posts in the West have been trained there. Center: Sailors practicing rescues at drill school. Right: Fireman in training jumping into net. A fast lens stopped the sailor, exhibiting good technique in mid-air.

Fire Extinguishers for OCD

Thousands of new fire extinguishers to be used by OCD block captains and fire wardens in fighting incendiary bombs and fires started by bombings, are rolling today from factories in the east, the middle-west, and the west.

Two million, two hundred and fifty-eight thousand extinguishers have been contracted for and with production increasing daily it is likely that OCD officials in the "danger areas" will begin to receive the first of them soon.

Underwriters' Laboratories announced, after completing an inspection of the production at many of the twenty-odd factories where the extinguishers are being made, that test equipment and inspection programs have been set up at most of the plants. The Laboratories will test the extinguishers and label those that meet the specifications.

To design a rugged fire extinguisher which could be used by OCD workers under all sorts of conditions and which could be produced economically in large numbers without using critical materials urgently needed for offensive war production, has been no small task.

By collaborating on this problem Army engineers, OCD officials, War Production Board, Underwriters' Laboratories' engineers, and fire extinguisher manufacturers have developed a new type of fire fighting device which meets all the requirements.

The extinguisher consists of a galvanized iron tank. The tank holds four gallons of water. In the tank is installed a hand pump to which is connected a ten-foot length of hose with a nozzle on the end equipped with a deflector so that a solid stream or a spray may be had at will.

The essential difference between the new OCD type of water extinguisher and the type which has been used by fire departments for many years is that the former is made almost entirely of non-strategic materials.

The pump of the OCD extinguisher, instead of being made of brass, is made of steel tubes coated inside and out with porcelain—a radical departure from previous construction. The piston, piston rings, stuffing box, and valves of the pump are made of plastics. Glass marbles serve as valve balls. Such parts were formerly made of brass.

The ten-foot length of hose attached to the pump is made entirely of reclaimed rubber, no crude rubber at all being used for this part. The nozzle on the end of the hose is of plastic which will withstand hard abuse without breaking.

The complete extinguisher, filled with four gallons of water, weighs approximately 45 pounds, and is thus easy to handle. It can be operated by one person or can be kept continuously in use with two or three persons—one person can handle the nozzle in the attic of a home, for instance, another can pump the extinguisher on the floor below, while a third carries buckets of water to keep the extinguisher supplied.

The first of the extinguishers was turned out by the Dayton Pump and Manufacturing Company, Dayton, Ohio.

The extinguishers have been designed with a tapered tank so that they may be "nested" to conserve space in shipping to the various parts of the country where they will be used. They will be shipped disassembled, to be assembled at their destinations by the OCD personnel to whom they are assigned.

3-A Men Lose Fight to Become Firemen

Supreme Court Justice Benedict D. Dineen upheld the right of New York City, in appointing firemen from the civil eligible list, to "pass over" men who now have a 3-A classification for selective service but who face reclassification into 1-A. The court ruled in the case of forty-five firemen eligibles in this category who sought to compel Fire Commissioner Patrick Walsh to give them appointments.

While the ruling concerned only the Fire Department, it would be applicable also to policemen and others. The law as it stands permits the passing over of men classified as 1-A in the draft in appointments to the uniformed forces of the Police and Fire Departments and the Department of Correction. The court sustained the Fire Commissioner in going beyond the letter of the law and also passing over men whose classification into 1-A was imminent.

The forty-five eligibles in the case were men married after September 15, 1940, or men with "collateral" dependents other than wives or children.

Commissioner Walsh said he faced a difficult problem in obtaining replacements vitally needed for the department. He pointed out that the fire fighters had lost 278 men to the armed forces since July 1, 1941, and that of 671 appointed since that date sixty-nine have already been inducted into the armed forces. If replacements were to be constantly depleted in that way, he said, the difficulty of maintaining the city's safety would constitute a menace to the city and to the nation's war effort.

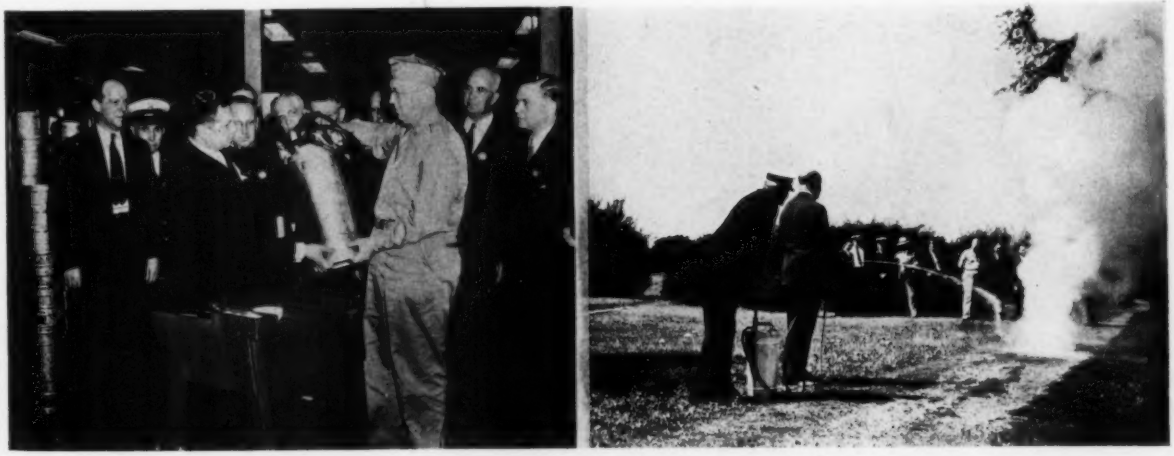
September Fire Loss

Fire losses in the United States during September were $20,443,000, according to the estimate given out by the National Board of Fire Underwriters. These estimated losses, under fire insurance policies, are on an incurred basis, including an allowance for unreported and uninsured losses.

Losses from fire continue to show a sharp decline from those reported a year ago. The September total shows a drop of seventeen per cent from the total in the same month last year, but four per cent more than the $19,680,000 total for August of this year.

Source of Information

In publishing the article entitled "How Britain Created National Fire Service" in the September issue of FIRE ENGINEERING the Editors neglected to state that it was furnished by the British Information Services, 30 Rockefeller Plaza, New York, N. Y.



The First Fire Extinguisher of Two Million to Be Made for OCD

Left: The first fire extinguisher to be made for the Office of Civilian Defense, after passing the tests of Underwriters' Laboratories' fire protection engineers, is presented to Captain L. F. Mullen of the U. S. Army Procurement by Vice-President E. E. Eickmeyer of the Dayton Pump and Manufacturing Company, the first company to begin production of the new fire fighting units. Right: District Chief Forrest B. Lucas of the Dayton, Ohio, Fire Department is doing the pumping while Edwin L. Lauer, Underwriters' Laboratories' inspector directs the stream from the new extinguisher. The extinguishers will be available soon for distribution to OCD block captains and fire wardens to protect against incendiary bombs and fires started by bombings.

One Hundred Persons Rescued in Apartment House Fire

San Francisco firemen, aided by police, auxiliary firemen and policemen, military police and the naval shore patrol miraculously saved nearly 100 persons from a fiercely burning apartment building in the downtown section recently.

Flames and smoke from a basement blaze were surging up through a garbage chute, mushrooming out to every floor of the five stories of the Louise Apartments at 434 Leavenworth Street, when firemen, responding to Box 1544, Leavenworth and O'Farrell Streets, arrived on the scene.

They arrived to find nearly all tenants of the fourth and fifth floors trapped by the choking, billowing smoke. A second alarm, then a third, a special call for the rescue squad, two special calls for two truck companies each, two calls for three ambulances, a call for the searchlight wagon and a fourth alarm were sounded in that order and within 31 minutes of receipt of the first alarm.

Firemen wearing gas masks made trip after trip through the building, sometimes leading one or more persons to safety and more often carrying a hysterical woman, a half-conscious man or a trembling child.

Other firemen from the seven-truck companies summoned to the fire clambered up and down long ladders with human bundles slung over their shoulders. Others stood below with outstretched life nets, but because of the splendid work done by the truckmen, it was not necessary to use them.

Among the injured was Firemen Henry Nolan, 24, who fell three floors, suffering a dislocated ankle, a serious back injury and cuts and bruises. He was about to climb in a third floor window to rescue a woman when something below, hidden by the dense smoke, hit the ladder, toppling him with it. Luckily, he landed on a lawn rather than the sidewalk.

A tenant, William Lingeral, was saved by first aid at the scene after a splinter of glass punctured his neck. Digital pressure, applied by the fireman who brought him down a ladder to an ambulance crew, and the crew's fine work on the way to the hospital, saved him from dying from loss of blood.

Assistant Chief of the Fire Department Albert J. Sullivan took personal charge at the fire, coming from Truck 1's house on the first alarm. He has been "sitting in" for Chief Charles Brennan, who was on leave, recuperating from a heart attack suffered from overwork several months ago.

BOB GREENOCK.

Chief Boughner Dead

Former Chief George T. Boughner of the Grand Rapids, Mich., Fire Department died suddenly on September 9.

Chief Boughner retired on October 31, 1938, just a month after his fiftieth anniversary in the fire department.

Born in Ontario in 1866, the Chief came to Grand Rapids in 1886. In September of 1888 he entered the fire department as a part-time fireman, but a month later was assigned to a full-time job.

Within two years after becoming a full-time member of the department he was made a lieutenant, serving in that capacity until August 2, 1912, when he was made captain. On June 30, 1915, he became battalion chief and 1916 he was elevated to marshal, serving in that office until his retirement in 1938.

Chief Boughner was the first president of the Michigan State Fire Chiefs Association and also served that association as treasurer for several years. He was also an honorary life member of the International Association of Fire Chiefs.

Chief Welch Joins Army

Chief Edward P. Welch has received an indefinite leave of absence from the Columbus, Ohio, Fire Department to enter the service of the United States Government for the duration.

Captain E. P. Welch

Chief Welch received a commission of Captain in the Army and is temporarily stationed in Cincinnati.

The Chief entered the fire department on May 3, 1913. In 1917 he obtained an indefinite leave of absence to serve in World War No. 1 and was stationed at Camp Sherman and later at Fort Sill, Oklahoma, leaving the service at the end of the war as First Lieutenant.

On June 22, 1933, he became Chief of the Department and has served in that capacity to date.

New Ladder Truck for Sacramento

A sixty-five foot steel aerial ladder truck is the latest acquisition of the Sacramento, California, Fire Department.

The truck was delivered to the city by the American-LaFrance-Foamite Corporation of Elmira, N. Y., and is one of three aerial ladder trucks for which priorities were granted by the War Production Board recently.

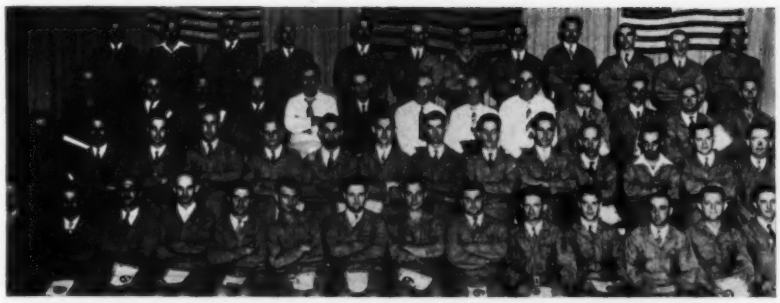
The truck and ladder raising mechanism is driven by a V-12 motor, and the ladder raising mechanism is fully hydraulic. It has a closed cab, and carries 243 feet of various sized ladders in addition to the sixty-five foot aerial, besides a variety of miscellaneous equipment.

The new aerial ladder had been in service for only two hours, when the first call for its services came in.

Chief Terence Mulligan, head of Sacramento's Fire Department, said that bids were recently opened and are now under consideration by the City Council for the purchase of a 1,250 gallon pumper, and it is planned to purchase one new piece of equipment each year.

Sacramento's New Aerial Truck

Standing proudly on their new truck, reading from top to bottom, are firemen Malnburg, Campbell, Wilson and Webber, with Driver Corrigan at the controls. Standing in front of the truck are Captain T. A. Deise, left, and Chief Terence Mulligan, right.



Number 2 Engine Company's Auxiliary at Their Graduation Exercises

The men in the third row center, reading left to right, are Mayor Don C. McCombs, Director of Civilian Defense for Kansas City; Fred Werbe, Kansas State Fire Marshal; Captain Ben M. Smith, Coordinator of Civilian Defense for Kansas City; Chief Olander Lind, the man responsible for this group; and Captain Jack O'Leary, Drill Master. In the first row, seventh man from the left, is Captain Frank Love, the Captain of this auxiliary.

Kansas City Has Active Auxiliary Group

Kansas City, Kan., has one of the best auxiliary organizations for a city of its size. Each of the fire stations has an auxiliary unit of from twenty-five to eighty fully trained auxiliary firemen.

The enthusiasm shown by the members is great in that they have all purchased uniform coveralls for their work uniforms and have not missed a single training class. These men were not taken from the rolls of civilian defense registrants, but were hand-picked by the regular captains of the stations in their districts. Rivalry has been built up among the various auxiliaries in the form of softball, handball and other athletic activities.

These men train twice a week, their training consisting of ladder, hose and salvage evolutions and group study of fire prevention.

$100,000 Fire Destroys Forty New Cars

Fed by exploding gasoline tanks, fire destroyed a huge warehouse in Rochester, N. Y., containing 150 new 1942 "frozen" Chevrolet autos, completely equipped.

Damage was estimated at upwards of $100,000, with forty of the new cars destroyed and 110 badly damaged. They were owned by the Heinrich Motors, Inc.

Starting shortly before 9 a.m. on October 1, the fire was one of the most spectacular in the northwest section of the city for many years.

A heavy, black column of smoke from burning rubber and oil spiraled skyward, then spread over the area. Auto gasoline tanks and oil drums exploded with the rapidity of fast-firing field artillery.

A 3-3 alarm brought eleven fire companies, protectives, two ambulances and three battalion chiefs under Acting Chief William E. J. O'Leary to the blaze.

The fire was discovered by an employee shortly after he reported for work. Seeing flames in the front office, he telephoned an alarm. He returned to the warehouse and helped other workers take out four trucks.

When Battalion Chief William Norris arrived in response to the telephone alarm the front of the structure was like a furnace. He ordered "three-twos" and later the "three-threes."

Intense heat and exploding oil drums and gasoline tanks prevented firemen from entering the building. They brought nearly a dozen high pressure hose lines into action.

Shortly after the final companies arrived, part of the huge wooden roof of the structure, supported by steel girders, collapsed. The smoke column mushroomed down, then shot skyward again, streaked with flames, upwards of 100 feet.

For more than an hour firemen poured thousands of gallons of water into the flames before the blaze settled down into a smouldering mass of wreckage.

Business Section of Hannibal Swept by Fire

Fire swept the principal business section of Hannibal, N. Y., recently, razing the Masonic Temple, destroying adjacent stores and forcing the evacuation of four families. Loss was estimated by Fire Chief Lloyd Tyler of the Hannibal Volunteer Fire Department as close to $75,000. The fact that the wind was from the southwest, sweping burning embers across the village square on which the stores front, is credited with aiding firemen in preventing a conflagration which might have destroyed several residences.

Fire fighting equipment from eight communities, including Oswego and Fulton, was called to join the Hannibal department in quelling the blaze, which was discovered at 3:30 a. m. and not brought under control until 6:00 a. m.

Completely destroyed, with all equipment, furnishings, stock and records, in addition to the three-story brick Masonic Temple, were a food market, the village office, with its records going back 100 years or more; a meat market and a barber shop.

The blaze apparently started in the partition between the meat market and the grocery store. It was thought possible that rats had started the blaze, for several cases of matches were stored near where the fire apparently originated.

With the cistern becoming overtaxed because of the heavy drain of several lines, the Oswego and Fulton, as well as other departments, pumped from the creek. Eleven streams were played on the blazing structures and adjacent buildings.

At one stage of the fire, heat was so intense firemen had to use shields to get their leads within range of the burning buildings.

Assisting the Hannibal Fire Department were the fire departments of Oswego, Fulton, Wolcott, Granby Center, Red Creek, Ira Hill, Fair Haven and Cato-Meridian.

How to "Unfreeze" Autos in One Fiery Lesson

Explosions of gasoline tanks on these 1942 autos kept firemen from entering this warehouse during a $100,000 fire in which forty cars were destroyed. The flames damaged 110 other new cars. All the autos were fully equipped.

Auxiliary Firewoman in Cranston Fire Department

A new field of war work for women has been opened in the Cranston, R. I., Fire Department that of women auxiliary firemen. Although only one young lady has been signed up and completed an extensive training course, the Chief of Department and other civilian defense officials are working on a plan whereby women may be used to augment regular firemen.

Firewoman Patsy at the Watch Desk

This particular young lady, nineteen-year-old Dorothy "Patsy" Clark, became interested in this job when her father, George Clark, who had signed up as an auxiliary, returned home with stories on how interesting the course was. Patsy, as the men in the station have dubbed her, asked her father if she couldn't be a firewoman. Mr. Clark secured permission of his instructor, who in turn got the consent of the Chief. Patsy was then told to report to the quarters of Engine 3 three times weekly to receive instruction. Accompanied by her father, she has been put through a rigorous training and can do all but the heavy work as well as any of the other auxiliaries.

She takes her training very seriously and in a business like manner. She can operate a centrifugal pump, take a line up a ladder and can in fact perform a majority of the evolutions.

During the day, Patsy works in a defense plant in Providence where at first she was kidded about her extra curricula activities. Now several girls are seriously interested in this type of work whereby women companies can be formed for the present emergency.

A. H. Selleck.

Saginaw Wins Fire Award Three Times

Fire Chief Frank W. Bender of the Saginaw, Mich., Fire Department and his men have a permanent trophy. It is the Paxton Mendelssohn Trophy for outstanding fire prevention activities, which the department has won for the third consecutive year.

The reward was presented to Chief Bender at the annual session of the Southeastern Michigan Association of Fire Chiefs. Saginaw's good fire record won the trophy for 1939 and 1940, and now for 1941. The trophy, a handsome twenty-eight-inch silver cup, will make Saginaw Fire Headquarters its permanent abiding place. Its donor, Paxton Mendelssohn, is one of Detroit's top notch fire fans.

Fire losses in Saginaw for the past ten years are $1,750,000 less than they were for the preceding ten years.

Saginaw was also awarded first place in the Michigan National Fire Waste Council for 1941.

A plaque, celebrating the winning of the award, has been voted by the City Council.

Fireman Rowing Champion Joins Navy Air Cadets

The nation's No. 1 single sculls rowing champion—Fireman Joseph Angyal, Engine Co. 8, New York Fire Department, is now in training as a U. S. Navy Air Corps cadet at the University of North Carolina, at Chapel Hill. He became national rowing champion last July on the Schuylkill River, Philadelphia, Pa. This is the second time in twenty-six years that the national single sculls championship is held by a New York Fireman. Thomas Rooney of the fireboat James Duane captured the same title at Duluth in 1916. Angyal and Rooney are not only fellow fire fighters, but club mates—the Ravenswood Boat Club on Flushing Bay, New York.

The son of Hungarian immigrants, "Little Joe" is sure he'll get his Navy wings—his name in Hungarian means angel. He has captured first place in fifty-five of seventy-two races rowed in four years. Fireman Angyal is twenty-six years, stands five feet, seven inches, and weighs 144 pounds, making him the first lightweight to win the national single sculls crown in seventy-seven year of amateur rowing. He was appointed a fireman four years ago.

Jerry Daly.

Fireman Joseph Angyal, Number 1 Rowing Champion

Chief Cooney to Remain in Office

Edward J. Cooney, the only Chief the Little Falls, N. Y., paid Fire Department has ever had, is to continue to serve in that capacity through 1943, at least, although he has reached the age of seventy and is eligible for retirement. The State Civil Service Commission has granted a request for Chief Cooney's retention in service through 1943.

After a municipal employee, subject to civil service and participating in the state pension system reaches the age of seventy, he can be continued in office only if the mayor makes a successful application to the state to grant an extension of service. Providing the public servant on whose behalf the application is made is physically and mentally qualified to continue his services, extensions can be granted until he reaches the age of seventy-five, when retirement is mandatory.

Chief Cooney was a volunteer fireman with the chemical Engine Company No. 5 from 1897 until 1900, at which time he became Chief of the Fire Department and has served continuously in that position to the present.

Air Raid Unit for Allenhurst Fire Company

The Allenhurst Fire Company No. 1 of Allenhurst, N. J., have recently acquired an air raid unit.

The truck was assembled by William A. McGrath, Engineer of the company, and Chief Hartson A. Cook of the Junior Department.

The truck is painted a battleship gray with white blackout trim. This is similar to those used in England. In addition it is equipped with blackout lights.

Air Raid Unit with Some of Its Equipment

The truck can be used for small fires to save wear and tear on the big units of the company. It can also be used as an ambulance in an emergency by taking out the equipment on the seats. At first it was planned to use it solely for air raids, but it is ready to answer accident and fire calls of all types.

Included in the equipment carried on the truck are 300 feet of 2½-inch hose, 500 feet of 1½-inch hose, two siamese connections, two fog nozzles, two shut off nozzles, two soda and acid extinguishers, two spot lights, two all-purpose gas masks with Army canisters, five knapsack pumps with spray and jet combination nozzles, two axes, two pairs of rubber gloves, ten pairs of bomb goggles, one twenty-foot ladder, one ten-foot pike pole, 100 feet of rope, one first aid kit, one pair of wire cutters, two crow bars, four shovels, one fireproof blanket, six hose straps, six spanners, two hydrant wrenches, two reducers, one nozzle for 2½-inch line, two salvage covers, and eighty pounds of bomb powder.

Firemen Corral Bus

El Cerrito, Calif., firemen, using fire trucks as cow ponies, a heavy tow rope as a lariat and the main highway on the east side of San Francisco Bay as their corral, successfully bulldogged a runaway Greyhound Lines bus that caromed like a juggernaut through early morning traffic after a head-on collision with an auto had knocked the bus driver unconscious and put the brakes out of commission.

Police later reconstructed the spectacular event as follows:

The bus was going south on East Shore Boulevard, El Cerrito, loaded with defense workers when a car driven by Victor J. Yellis, shipyard worker of Berkeley, collided head-on with it, killing Yellis and injuring a girl and another man riding with him.

The crash put the bus' brakes and lights out of order and knocked the driver, Lawrence Oie, 28, of Vallejo, unconscious. Two soldiers and a civilian managed to get Oie out of the driver's seat. One of them steered the bus as it ran away down the slight grade.

Other passengers sprinted ahead of the bus, warning away oncoming vehicles. Someone called the El Cerrito Fire Department.

Two trucks sped down the highway, overtaking the bus. One, its red lights blazing, was maneuvered in front of the slowly but surely moving bus. The other, driven by Fire Captain Don Bonini, attempted to get a line aboard the bus, a line that could be used to halt it.

Seeing that the bus could not be stopped that way, Capt. Bonini hastily swung the fire truck around, then raced in reverse after the bus. Working in deadly peril from the rear step of the truck, firemen, aided by the expert driving of Capt. Bonini, managed to hook a tow rope around the rear motor support of the bus.

With the line made fast, Capt. Bonini threw his truck into low gear and gently applying the brakes, the big, lumbering bus finally came to a stop.

The other fire truck, its siren howling and red lights glowing in the early morning light, had successfully warned off approaching traffic, although at one intersection it nearly hit a car driven by a motorist who was later arrested for failing to give right of way to a fire department vehicle.

Eleven passengers aboard the bus were hurt in the original crash.

BOB GREENOCK.

Kansas City, Kans., Has Two Large Fires

Inside of twenty-four hours, Kansas City, Kans., lost an estimated $325,000 by fire, and a number of firemen were sent to the hospital.

The first fire, which occurred on October 7, caused $150,000 damage in the yard of the Badger Lumber Company. Defective wiring was believed to have caused the fire, which destroyed a one-story brick structure serving as office, tool and storage rooms, three lumber sheds, and damaged central buildings filled with roofing, lumber and shingles.

On October 8, a fire destroyed the last remaining building of the Old Morris Packing Company. Unused for many years for its original purpose, the ancient brick structure had been used for storage by the B and G Wrecking Company. The blaze caused damage estimated at $175,000.

Eleven Die in Triple Crash

At least eleven persons lost their lives in this flaming inferno when a gasoline tank truck exploded after it had collided with a Queen City Trailways bus at Lumberton, N. C., on October 3. Eighteen persons were injured and managed somehow to clear themselves from the burning wreckage. All that remains of the bus and truck is a mass of charred steel. The pre-dawn tragedy occurred on U. S. Route 31 when the gasoline truck (left) going north, sideswiped a truck (right) and swerved across the road and ploughed into the fully-loaded bus (center).

Otis Smith in Air Corps

Otis Smith, who conducted "Among the Fire Fans" and "Fire Facts" in

Private Otis Smith

FIRE ENGINEERING for some time, is a Private in the 922 Technical School Squadron (Sp.), A. A. F. T. T. C., and is now located at Atlantic City, N. J.

Fire Bug Sets Two Multiple Alarm Blazes

A firebug upset the first day of Fire Prevention Week in Providence, Rhode Island, by starting two multiple alarm fires in less than twenty-four hours. The first fire was in Infantry Hall, a seventy-year-old four and a half story brick building on South Main Street. At 4:58 A. M. Sunday morning, October 4, a passerby noticed a glow at the back of the building on the top floor and turned in an alarm. When Deputy Chief Harry McElroy arrived at the scene, he ordered a second alarm, which was sounded at 5:07 A. M. By 6:07 A. M. five alarms had been turned in and the fire had gained possession of the entire top floor and roof, and the flames and sparks were shooting skyward menacing the neighborhood.

With the arrival of Chief Thomas Cotter a water tower and several deck guns were put into play and soon were pouring water into three sides of the building. Meanwhile companies were attacking with hand lines from the rear and third and fourth floors. When the roof gave way, Ladderman James McCarthy was trapped by the falling beams and sustained a concussion of the brain, a broken wrist and leg and is in serious condition at the hospital. By the time the flames were brought under control the roof had fallen in. The building's top floor was used as an auditorium and the third floor as meeting rooms for various organizations. The first and second floors were occupied by commercial firms. The fire was started in the auditorium and the damage was unofficially estimated at $160,000.

At 4:45 A. M., Monday morning, October 5, a passerby noticed smoke coming from the Holy Rosary Church on Fox Point Boulevard, less than a quarter of a mile from the scene of the first blaze, and turned in an alarm from Traverse and Wickenden Sts. When Acting Battalion Chief Sheridan of the 1st Battalion arrived he ordered a second alarm sounded. The second alarm companies were met with a heavy smoke caused by the burning of heavily varnished woodwork inside the church. The fire mushroomed up through the walls and finally out through the roof. After the fire had broken through the roof it gained considerable headway and a third alarm was sounded. When the flames turned the interior of the church into a mass of flames a fourth was sounded. When the fire was brought under control only the walls were left standing, the interior badly damaged by fire and water. The damage was unofficially estimated at $200,000.

Meanwhile the police had booked a twenty-three-year-old youth under suspicion of having set the fire. The young man was seen by a rookie patrolman running away from the vicinity of the church about 4:35 A.M., shortly before the first alarm had been sounded. The policeman gave chase and caught the man just as the apparatus was responding to the first alarm. The officer questioned the prisoner about the fire but he evaded the questions. He was turned over to the detectives and a confession of having set the five-alarm blaze in the hall and also the four-alarm fire was obtained. He also confessed to very thorough plans of firing St. Josephs Church the next night and the following night of setting fire to the Cathedral of Sts. Peter and Paul.

The suspect had been confined to a home for the feeble minded a couple of years previous but had been released. While there the authorities said he had an I. Q. of 39. Having no address, he asked the superintendent if he might sleep in Infantry Hall the night of the blaze. In the early morning he put some cigarette papers under the stage in the auditorium and lit them and went out into the crowd to watch the fire. The next night he broke into the church and started the fire by upsetting the vigil light on the altar.

West Coast Brush Fire Loss Placed at $500,000

A slackening wind helped fire fighters battling a blaze which swept the Malibu Hills, Cal., and left an estimated $500,000 worth of destroyed and damaged homes in its wake.

Residents of the thickly-populated Fernwood Park region returned as the wind died down on the third day of the brush fire which swept through the canyons above the well-known movie colony at Malibu, near Los Angeles. A general evacuation of the threatened area had started.

Thirteen men were burned, some seriously, when a flash blaze trapped them as they fought the fire along one sector of the five-mile front.

Fire Protection at Salina Cantonment

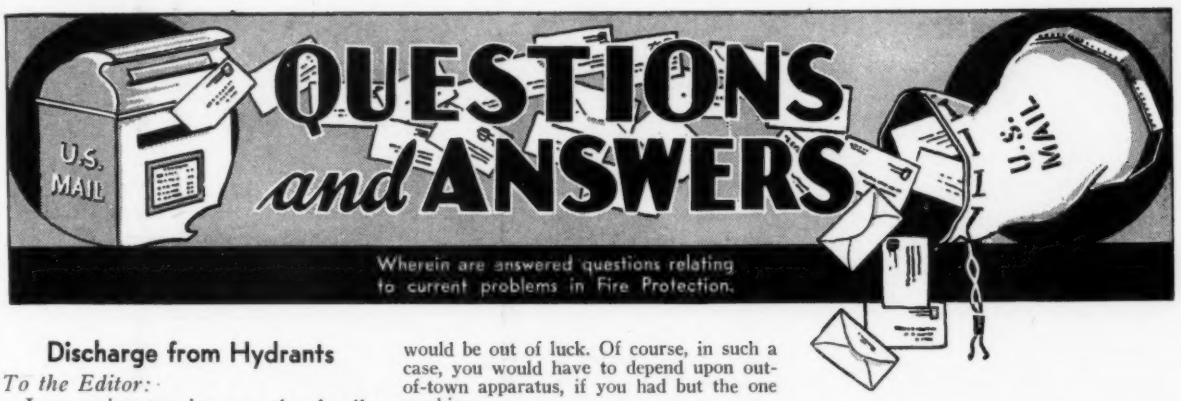
A far larger fire department than the town in which the cantonment is located has, is being set up at the Triangular Cantonment in Kansas, where many hundreds of frame buildings call for the utmost in vigilance and fire fighting efficiency.

Station No. 1 is now completed, equipped and manned and work is going ahead on the four others which are needed to protect this training center. Each of the stations will have a 750-gallon pumper and a 500-gallon pumper. Sixteen men will be on duty at each station.

Fire Chief for the cantonment is J. A. Perry, formerly Fire Chief at Camp Crowder, near Neosho, Mo., who was a member of the Kansas City Fire Department for twelve years. He was a captain for four years at Kansas City.

In addition to its efficient equipment, the cantonment fire department will have approximately a thousand call boxes distributed over the 3,000 acre building area in such a fashion that a person wanting to turn in a fire alarm will never have to travel more than 500 feet to reach a call box. There will also be an automatic recorder, so that memory will not have to be trusted in time of excitement. In addition to these precautions, the hospital area will have an automatic sprinkler system.

Personnel of Station No. 1 of the Salina Triangular Cantonment Fire Department
Chief J. A. Perry is fourth from the right. The girl in the picture is Rachael Young, Secretary to to Chief Perry.



Discharge from Hydrants

To the Editor:

I am going to give you the details of a fire protection system in a specific city, and I would like you to tell me which of these fire hydrants are adequate and which of them are not, under the circumstances, to furnish fire protection for a built-up section, using a 500-gallon per minute rotary gear pumper. All the hydrants listed have 2½-inch outlets. The entire hydrant system is supplied by a single six-inch main. The following are the numbers of the fire hydrants and the static pressure, the residual pressure, the flow in gallons per minute and the size of the main supplying each:

Hydrant	Static Pressure Lbs.	Residual Pressure Lbs.	Flow in Gallons per Min.	Size of Main Inch
1st	98	7½	460	6
2nd....	96	6½	430	6
3rd	97	4	340	4
4th	93	1+	175	4
5th	88	¾	150	4
6th	90	1+	165	4
7th	90	2½	270	6
8th	89	2¾	280	6
9th	95	3	295	6
10th	99	3	295	6
11th	97	1½+	215	3
12th	91	½	120	4
13th	86	No indication	75 Est.	4
14th	82	No indication	75 Est.	2
15th	92	1¼	190	4
16th	98	1¼	190	4
17th	100	1¼	190	4
18th	103	1½	205	3
19th	104	1¼	190	3
20th	98	1¼	190	3
21st	102	½	120	4
22nd....	103	No indication	90 Est.	4
23rd....	100	½	120	2

Answer: In checking over the discharges of the various hydrants, I note that not one of them is capable of giving the capacity of the pumper, namely, 500 gallons per minute.

Apparently the trouble with the system is the fact that it is supplied by a single 6-inch water main.

Such diameter water main, if fed from two ends, is expected to give only four fire streams of 250 gallons each. If the 6-inch line is very long and supplied only from one end, then such a line is normally expected to give but two fire streams of 250 gallons each.

Where a spreading fire requires more than two streams, I believe the department would be out of luck. Of course, in such a case, you would have to depend upon out-of-town apparatus, if you had but the one machine.

The static pressure in a system of this type means nothing. While the pressure might be good while there is no flow, the moment the flow starts, due to friction loss, the pressure might drop very seriously. This is apparently what has happened in the tests you have conducted on the hydrants, for the residual pressures are certainly very poor.

A 1⅛-inch nozzle is as small a nozzle as is commonly used on fighting fires outside and inside a building. Normally a 1¼-inch nozzle is used for outside work and a 1⅛-inch or 1-inch nozzle for inside work.

Considering a 1⅛-inch nozzle, at 46 pounds pressure, which is none too great, it will deliver 254 gallons per minute. Thus the flow from any one hydrant would be less than two effective streams, considering the above stream as effective.

One stream can handle any residence fire, but if you have a fire involving more than one building, you would probably be in serious trouble.

Two solutions to the problem present themselves; paralleling or increasing the size of the feeder main putting a balancing storage tank in the borough. The storage tank should be placed on the opposite side of the city from the point of entrance of the six-inch supply line. Then in the event of high demand, water will flow both directions and give you at least twice the flow from the system.

Flash Point of Gasoline, Etc.

To the Editor:

Will you please answer the following questions:

What is the flash point of turpentine?

What is the flash point of gasoline?

Is there any difference between the flash point and ignition point? If so, what is it?

Is the statement "A closed tank full of gasoline will not explode" true or false. Explain.

Is it true that solids do not burn, but that it is the vapor given off by them which burns?

J. A. G.

Answer: The flash point of turpentine is 95 degrees Fahrenheit (av.). The flash point of gasoline is —45 degrees Fahrenheit (av.).

The flash point of a liquid is the temperature at which it throws off a vapor which may be ignited by application of a source of ignition. The ignition point is the temperature at which the liquid will take fire, and continue to burn.

The ignition temperature of turpentine is 464 degrees F., while that of gasoline is 495 degrees F.

The statement made that a closed tank filled with gasoline will not explode is "true." What is meant by the statement is that if flame is applied to such a tank, through the filler opening, an explosion will not take place, but the gasoline will burn. If the tank is only partly filled with gasoline, and if above the gasoline is the proper mixture of air and gasoline vapors, an explosion will take place.

For the above reason a filled tank of gasoline is considered less dangerous than a partly filled one.

If a tank full of gasoline, sealed tight, were placed in a fire, and permitted to heat to a high temperature, the tank would eventually rupture. There may not be an explosion, but only a seam may open. On the other hand, if the tank is very strongly constructed, it would be unlikely that the tank would rupture until the metal had been softened by heat.

When wood, or any other solid, burns, it is not the wood itself which burns but the combustible vapor thrown off by the wood. If you will examine closely the flame of a burning match, you will find that the wood itself is not burning, but rather the vapors which are being distilled off from the wood.

An even better example is a burning candle. The candle may be blown out and the flame immediately brought within a half-inch above the wick, and the candle re-ignites by the ignition of the combustible vapors thrown off by the wick and the paraffin.

Gallons Pumped From Tank

To the Editor:

Our city has a new water tank that holds 250,000 gallons of water. We took our 750-gallon pumper, pumped the tank up with water from one of our fire hydrants, laying 350 feet of 2½-inc hose. We used 5½-inch hard suction from the hydrant to pump. Engine pressure was 150 pounds.

The tank is a ball-shaped one and is thirty-nine feet high and thirty feet in diameter. It has a standpipe 118 feet long and three feet in diameter. In the standpipe we screwed a 2½x2-inch reducer with a cut-off

valve to our hose from the engine pump.

How many gallons per minute is pumped?

What is the back pressure?

What is the friction loss?

What was the pressure at the two-inch reducer or nozzle? J. B. H.

Answer: The total gallons pumped, if the tank and standpipe are completely filled, is determined as follows:

The capacity of the tank is 250,000 gallons.

The capacity of riser, or standpipe, equals 3.1416 × radius

= 3.1416 × 1.5 × 1.5

= 7.0686 square feet. This is the cross-sectional area of the standpipe.

Multiply by the height of the standpipe and we get the volume in cubic feet or volume = 7.0686 × 110 = 834.0948, or 834.1 cubic feet approximately.

One cubic foot of water equals 7.481 gallons.

834.1 cubic feet equals 834.1 × 7.481 = 6239.9021, or 6240 gallons approximately.

The total contents of the standpipe and tank is then:

250,000 + 6,240, or 256,240 gallons.

This is the quantity of water the pumper would have to deliver to the inlet to fill the tank and the standpipe.

The back pressure would be greatest when the tank is filled to overflowing. This would be 157 feet × .434 pounds per foot elevation, or 67.138 pounds per square inch.

As to the friction loss in the hose line, this can't be given unless the flow in gallons per minute through the hose is known. Nor can the pressure on the 2½-inch reducer nozzle be known unless the flow and other data are available.

Discharge from Fog Nozzles

To the Editor:

How do you figure the discharge from fog nozzles? E. W. A.

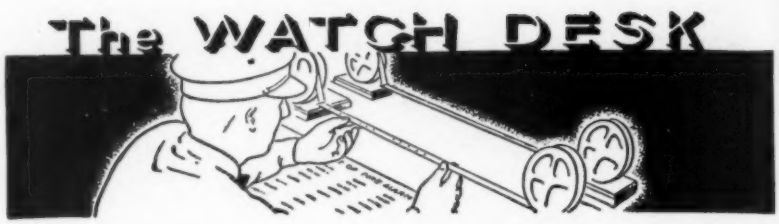
Answer: With regard to figuring the discharge from fog nozzles, there is no formula which could be used for this purpose. In the first place, no two designs of fog nozzles are the same. It is not like plain nozzles where you have a definite diameter. Some fog nozzles use two impinging streams while others use several. Still others use a circumferential opening for creating fog.

For the same pressure different fog nozzles of the same rated size give widely varying discharges.

We are giving below the discharge from three different makes of fog nozzles, which we have indicated by A, B and C.

Make of Nozzle	Size of Nozzle	— Discharge in G.P.M. — 30 lbs. press. per sq. in.	100 lbs. press. per sq. in.
B	1¼	19	34
B	1½	30	55
A	1½	35	67
B	2	82	152
A	2½	71	117
C	2½	91	165

You will note for the 1½ and 2½-inch fog nozzles that the discharges vary even at the same nozzle pressure. This explains why no formula could be used for determining discharge therefrom.



Our inquiring reporter overhauls the firemanic news of the day

"Seat" of the Fire!

This 'un, according to our New England newsclipper M. B., happened in Brattleboro (Vt.). Seems that fire broke out—of all places—in fireman George Hill's pants. Worst of all, it happened, not in his old turnouts, but in his good duds and while he was attending a meeting of the Brothers. It must'a been a "hot meeting" because, according to Chief Henry Whitney of that Department George's pants suddenly erupted smoke and fire. Luckily the Chief was on the job and a few husky slaps in the right place "confined the blaze to point of origin"—with loss "estimated at 71 cents!"

* * *

Field Day for Firemen

Two Richland (S. C.) County candidates for State Senate got an even break with a group of prospective voters. Candidate Joe Berry addressed a rally of auxiliary firemen. The firemen, a few minutes earlier, had extinguished a fire at the home of Senator Brockington, candidate for re-election. Seems that the politicians of S. C. are no different than others when it comes to "cultivating" the Brothers.

* * *

Tragic Obedience

In Atlantic City (N. J.) three-year old Sylvia Hill's dress caught fire while she was playing with a gas stove in her home. Instead of running for aid, she went to bed, as she had been trained to do when she was naughty. Dress ignited bed covers, further injuring the child. Neighbors found her sobbing in doorway of home with her dress burned completely off. She died an hour later in City hospital.

* * *

Odd Job Department

To add to those "odd jobs" the Brothers are continually being called on to perform:

In Tampa (Fla.) when police, Board of Health and Audubon Society were unable to solve problem of getting rid of thousands of visiting sparrows, which elected to stop over en route further south, appeal to U. S. Biological Survey brought this recommendation, **"Spray the birds with a fire hose for several consecutive nights after they have gone to roost. It is believed they will seek other roosts."**

In Bloomington (Ind.) a woman called the F. D. asking in a calm voice, **"will you please come to my house."** The Brothers roared up, put a ladder against the house and climbed in. **"I lost my keys,"** the woman explained. The firemen found them for her.

In Bellport (L. I., N. Y.) a 48-hour search for Jackie, pet parrot of Mrs. Bruce Lachlan, literally had local firemen up two trees and ended only when Jackie considered his vacation over. While the Vols. still had ladder against one tree on which petulant parrot perched, Jackie flew onto a stick that Mrs. Lachlen carried. **"Hello,"** said Jackie. **"Hell—o,"** ejaculated the firemen, disgusted after chasing Jackie from tree to tree, hour after hour, for coupl'a days!.

In Peabody (Mass.) the humble hamburger brought to light a champ shot-putter with mighty arm, and an unusual request to the F. D. A Mrs. Sogoloff ordered some hamburger steak delivered to her 3rd floor tenement one afternoon. Grocer Jacob Sheimhit personally took around the freshly-ground viand. Reluctant to climb to the third floor, Sheinhit took aim and threw the wrapped hamburger toward Mrs. Sogoloff's piazza. The bundle whistled past the third floor, arose above the building top, landed neatly on the roof—in the broiling sun, inaccessible from the building itself. Therefore, a phone call to F. D. Hq. sent a truck roaring through the street—a ladder was quickly raised and a gallant if unidentified fireman ascended in the approved manner, retrieved Mrs. Sogoloff's hamburger, returned with it to terra firma, to the amusement of onlookers and chagrin of Sheinhit.

* * *

Lost Opportunity!

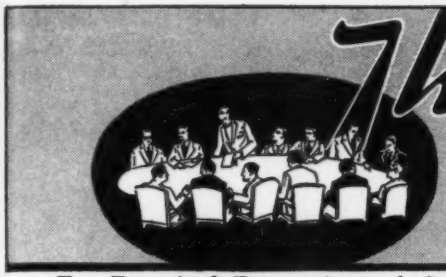
Appropos this dope about not being permitted to fight fire on government property except by invitation, Contrib' Earle Robinson sends us a bit of evidence. Seems that in answer to an alarm, fire trucks of the Philadelphia (Pa.) F. D. charged up to the local mint, one of most closely guarded institutions in America. While the Brothers argued with a guard who barred the entrance, a foreman leaned from a window and asserted, **"You can't get in here, Buddy." "But there's a fire,"** shouted one of the Brothers. **"There's no such thing,"** was the reply before the foreman slammed the window—**"but if there was, you still couldn't get in."** And they didn't!

* * *

Hot Off the Tape

Leo Biedermann, fire chief emeritus of Pearl River (N. J.), fell and broke his hip—we can sympathize with him.... This year's Fire Prevention Week was conducted under the OCD as matter of National defense. . . . Out Kansas City-way firemen pulled up to Armour's packing plant in response to alarm, found smoke billowing out of a whole corner of one of the buildings, stretched in with lines and went to work with

(*Continued on page* 702)



The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

FIRE PROTECTION CLASSES FOR INDUSTRIAL PLANT WATCHMEN

IN these days when protection of vital war industries is so important it is necessary to have plant men trained in the elements of fire protection and fire prevention. As one reader put it, "Our idea is that a uniform, gun and flashlight do not make a guard for a defense establishment." For that reason many fire departments have instituted courses for the training of industrial plant guards, for they feel that losses can be kept to a minimum if those in charge know the correct procedures to follow in inspection work, promptly notifying the fire department and in the use of fire extinguishers and other first aid appliances.

Readers are invited to send their comments on this subject for inclusion in the discussion which will be continued in the next issue. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York, N. Y.

HERE IS THE PROBLEM

Are industrial plant watchmen in your city given a course of training in fire protection and related subjects?

If so, under whose auspices is the course conducted?

What does the course include?

Do the industries cooperate willingly in having their watchmen attend?

What, in your opinion, are the benefits of such a course?

Discussion of the Topic

J. H. O'Neill, Chief, Niagara Fall, N. Y.: Almost all the plants in the City of Niagara Falls assigned the chief or assistant chief of their plant fire brigade to the Buffalo, N. Y., Fire College. The purpose of this course was to train instructors. The drills that were held at the fire tower were the same as are given to the paid members of city departments.

In addition, we have members of this department who are employed on their twenty-hours off duty to instruct members of plant fire brigades, as well as guards and watchmen.

The instructors from plant brigades upon concluding the course at the Fire College, return and instruct members of the plant brigades and the watchmen and guards. Most of the plants hold drills at least once every week in ladder raising, stretching hose lines, testing hydrants and sprinkler systems, etc.

William J. Lutz, Chief Engineer, Wilmington, Dela.: The Industrial Fire Prevention Association of Wilmington meets once each month and more often if it is deemed necessary, at Fire Headquarters. Demonstrations are held at different intervals, while the monthly meetings are devoted mainly to drilling the members in the duties of plant watchmen and firemen. Speakers from various sections of the country are in attendance and address the Association in modern fire protection and prevention. Motion pictures are shown, and from a plant watchman's point of view, are very educational.

This course is conducted under the supervision of myself. I conceived the idea of establishing an Industrial Fire Prevention Association in 1927. It was in March of that year that with the cooperation of the various industrial organizations of the city, the first meeting was held. It has been a permanent fixture ever since. The association is composed of chiefs, fire marshals, firemen and watchmen of the manufacturing plants of Wilmington. Officers are elected each year and the Association holds an annual banquet at which the Governor, Mayor and all city officials are present.

The course includes instruction in fire prevention; fire protection; fire fighting; care of hose, tools and equipment, as well as in the proper methods of using this equipment. Pumper and ladder work are also given, and the members are taught the value of an efficient fire brigade.

One hundred per cent cooperation is received from the various industrial plants who permit their chiefs, marshals and watchmen to attend all meetings and demonstrations and in every way possible cooperate with the Wilmington Fire Department.

I am of the old school that preaches "Practice makes perfect" and am sure that the meeting and demonstrations are very educational as well as constructive in nature and tend to make the men in the plant fire conscious and always ready to meet the emergency. Fire losses up to the present time have been held to a minimum.

Alex Thompson, Chief, Detroit, Mich.: Industrial plant watchmen are given a course of training in fire protection and related subjects by the Fire Prevention Bureau. The course includes instruction in the proper handling and care of first aid fire equipment, good housekeeping and fire prevention practice in manufacturing plants, detection of sabotage to fire equipment, fire fighting organization of employees in case of emergency, etc.

Instruction of this nature is beneficial to these employees in that knowledge of the above subjects makes them more valuable to their employer and more able to cope with emergencies that might arise.

The plant protection personnel, or a representative of the protection departments of most of the large industrial plants in the city, attended a series of classes in the school room of the Fire Prevention Bureau. This room has a complete sprinkler system installation as well as all types of first aid fire equipment.

Charles F. Stackpole, Chief, Lowell, Mass.: Industrial plant watchmen and many other employees of industrial plants were given a course of training in fire protection and related subjects many months ago. This course of training which covered a period of six weeks was conducted under the auspices of the Lowell Fire Department.

This course included lectures and demonstrations on types of fires and how to fight them; sabotage; use of first aid fire appliances such as various types of extinguishers, standpipe hose lines, axes and other forcible entry tools; raising of ladders; running of hose lines to various parts of the plant; and the proper method of ventilating. The watchmen in particular were impressed with the importance of early notification of the city fire department, also the importance of having all necessary gates open to admit the apparatus and directing the same to the location of the fire. Instruction was also given in the operation and maintenance of sprinkler systems. These men were given training in stretching hose lines and raising ladders. In two of our large industrial plants, fire protection and pre-

vention are in charge of two of the retired assistant chiefs of this department.

We received the whole-hearted cooperation of every industry in our city from the top-most official down to the lowliest employee.

As practically every industry in our city is engaged almost entirely in necessary war work, the importance of fire prevention and fire protection cannot be over-stressed as a factory that is destroyed by fire through carelessor otherwise is of direct aid to the enemies of our country. By teaching these men how to check a fire in its incipiency and how to recognize potential fire hazards, the fire departments can contribute much in the struggle of winning this war.

Paul Lefke, Chief, Lansing, Mich.: The Lansing Fire Department originally conducted a course in fire protection. The members that received this schooling are now instructors.

Cooperation on the part of the industries has been one hundred per cent.

The Oldsmobile Company, an industrial plant that employs in the neighborhood of 10,000 persons has 1,350 members that have received complete training, a ratio of 7½ to 1. Other industrial plants are on a par with the Oldsmobile.

Joseph E. Scanlon, Chief, Lynn, Mass.: Those plants who avail themselves of the opportunity of training are trained by officers of the fire department.

This course includes instruction on sprinklers, valves, fire hazards, location of fire alarm boxes and stations, whom to call when in trouble, methods of building coverage, how to extinguish fires, keeping aisles and passageways open for fire operations, salvage work, etc.

Interest in this work is only fair. Many of the larger concerns are interested, but where multiple occupancy occurs, little interest is shown.

I am a firm believer that the work will pay dividends, but it is discouraging at times that so little interest is shown by those who could benefit most.

Barney J. Houston, Chief, Cincinnati, Ohio: Industrial plant watchmen are given a course in fire protection by L. G. Schraffenberger, Superintendent of the Bureau of Fire Prevention.

This course includes instruction of the sounding of alarms of fire, use of fire extinguishers, operation of sprinklers, arson and sabotage, plant inspection, fire doors and demonstrations of volatiles and incendiary bombs. A local film is used to show the causes, effects and extinguishment of fire.

Our idea is that a uniform, gun and flashlight do not make a guard. Many of the plants do not operate around the clock, and should an emergency occur, a well-trained guard would be a valuable asset.

Through the courtesy of Mr. West Shell, President of the Cincinnati Fire Underwriters' Association, we were fortunate in securing a large section of a downtown office building. We have already trained about seven hundred guards and arrange the time to suit the industry. Day or night classes are held at the convenience of the men trained. The course is two and a half hours in duration and is given at one time. Many models and demonstrators, as well as movies are used.

THIS DISCUSSION WILL BE CONTINUED

Due to the large number of Chiefs who contributed their experiences, the discussion on this subject will be continued in the next issue.

John A. Slattery, Chief, Rochester, N. Y.: Industrial plant watchmen are given training in fire protection and related subjects. The course is given to them at the Rochester Fire College under the auspices of the Plant Protection Unit of the Office of Civilian Protection. It includes two hours of fire defense lectures and demonstrations, four hours of practical training in the handling of industrial and plant fire appliances and equipment and also includes two hours of war gas training.

We have found that our local industries cooperate very well and feel that this training is beneficial because we emphasize basic training and the simpler steps of fire protection and extinguishment in our opening lectures and follow this up with instruction in the actual handling of the appliances and equipment which they have available in their own plants. This assures prompt action on the part of these watchmen, in the initial stages of any fire which they discover. In addition to this, our Fire Prevention Division holds fire prevention classes which are well attended.

John C. King, Chief, Hartford, Conn.: It has been the custom of the Fire Department in cooperation with the Chamber of Commerce to conduct an annual school for watchmen, building superintendents and maintenance men. The course usually consists of five to seven sessions, about two hours each, stressing fire prevention and fire protection. Demonstrations, moving pictures and lectures are used. The proper type of fire extinguisher and how to use it, standpipe and sprinkler systems and special and common hazards are discussed.

The cooperation of industry in Hartford has been very fine and all through the summer we have had fire department officers assisting in the organizing and training of shop fire brigades.

Thorough instruction on what to watch is certain to make for a more alert and fire conscious watchman, thus aiding in the prevention of fire and the continuance of production.

Howard Travers, Chief, Baltimore, Md.: Industrial plant watchmen are not given a course of training in fire protection and related subjects as far as the Baltimore Fire Department is concerned. A course is promulgated, however, by the Baltimore Safety Council, and, I understand, industries generally cooperate willingly in its benefits.

Russell Wright, Chief, East St. Louis, Ill.: In most cases industrial plant watchmen are given a course of training in fire protection by our instructor and inspector. A number of the plants in our city, however, have their own fire brigade with their own chief, and a captain on each shift.

Moving pictures of incendiary bomb fires, instruction on how to use extinguishers and which types of fires they are to be used on are included in the curriculum.

The plants have been most cooperative, especially the war production plants.

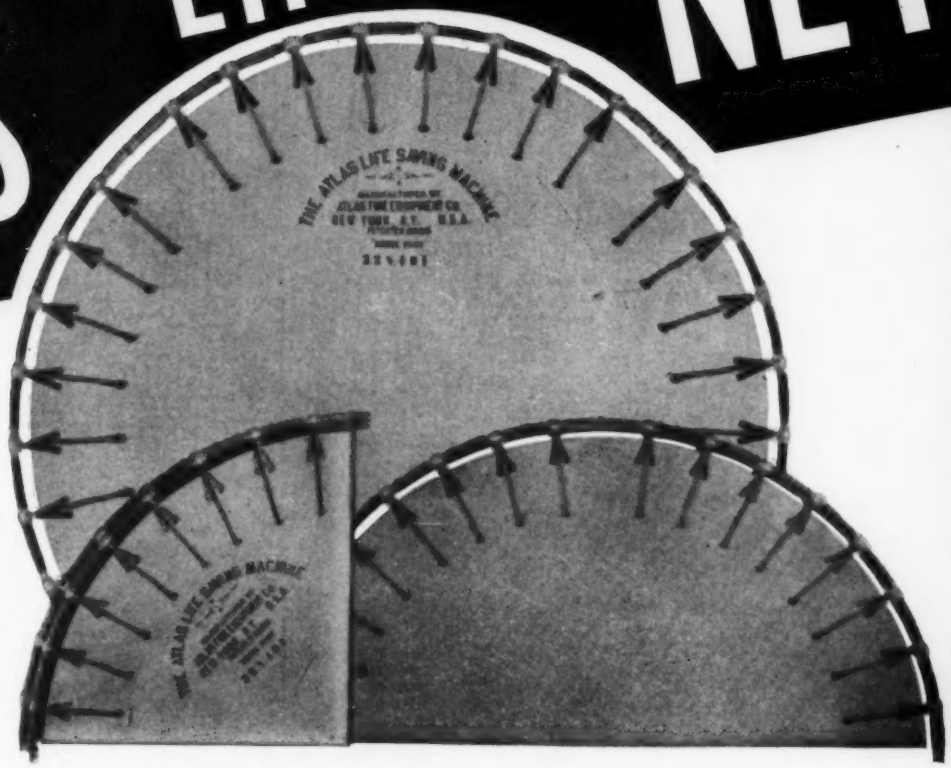
The benefits of such a course are numerous. Civilians are taught the fundamentals of fire fighting. They become conscious of the seriousness of fire during wartime. They gain a better understanding of the workings of the fire department. In general, I believe such training will cut down the possibilities of large fires.

Joe Carmichael, Chief, Little Rock, Ark.: In December, 1941, and Janu-

Classroom Scene

L. G. Schraffenberger, of the Cincinnati, Ohio, Bureau of Fire Prevention, lectures to his class of industrial plant watchmen.

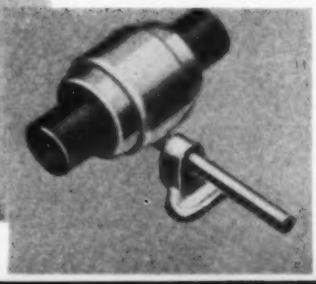
You can still get an ATLAS LIFE NET



—and it is still the BEST Life Net Money Can Buy

Atlas special dual shock absorbers scientifically engineered with recoil mechanism similar to that used in modern artillery. This exclusive Atlas feature absorbs the weight of impact, insuring safety to the person jumping and to the men holding the net.

Spring and rod (in fixed position) further insures elimination of strain on men. Double straps at each point of strain, plus a specially made fabric, make this the strongest life net on the market.



You Need Them NOW More Than Ever Before!

BEFORE you roll on your next call, take a minute to get this thought. You know that materials are getting scarcer. You know that any day the government may clamp down on life nets as well as belts, etc. — *which you may be badly in need of.* Is it necessary to remind the wise chief that the time to buy your net or belts is NOW!

Don't wait until you order your ladder truck. Trucks of any kind are practically impossible to get today. Take the opportunity to get the world's best life net now, while you can.

Saving lives is your first duty! The ATLAS is first choice of life nets! Here's why: It is the only net scientifically constructed to assure safe landing of persons jumping from high or low elevation. It is the one net that is first choice of the fire service, industrial fire service and government fire service. Dual shock absorbers, 32 on each Atlas net, insure complete cushioning, eliminates a strain on men holding the net. Other exclusive features are, rubber hand grips that prevent friction burns; automatic foolproof, spring locks; double straps for extra strength.

Write for literature fully describing the Atlas Net, and also Atlas Belts.

ATLAS FIRE EQUIPMENT COMPANY

26 WARREN STREET NEW YORK

How much did this $100,000 fire cost ?

According to newspaper reports of this fire, "the loss was placed at $100,000..."

But what did the fire actually *cost?* For the physical property that fire destroys is only the *beginning* of the loss. What really hurt are the far-reaching after-effects—interruption of business, customers lost, destruction of irreplaceable records, impaired credit standing, inability to fill orders—and a host of other intangible, but very real, losses which have driven many a business into bankruptcy.

And today, even these "intangible losses" seem trivial compared to the fact that a serious fire in any establishment whose products or services are related to our war effort may result in delays in production schedules or in delivery of supplies to our armed forces.

★ ★ ★

By assuring prompt discovery of fire, and immediate and accurate alarms, A.D.T. Protection keeps physical losses to the minimum, thereby also protecting the intangible values that always are affected when serious fire stops a business. A.D.T. Fire Protection Services include: Sprinkler Supervisory and Waterflow Alarm; Aero Automatic Fire Alarm; Manual Fire Alarm; Central Station Watchman's Reporting Service. Write for free descriptive booklets.

A. D. T. ELECTRIC PROTECTION SERVICES

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Avenue, New York, N. Y.*

CENTRAL STATION OFFICES IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A·D·T

Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

ary, 1942, we conducted a National Defense School pertaining to plant and public building protection. All of the plants and public buildings which maintained watchmen service were notified.

The course was conducted by the Pulaski County Defense Organization using fire department instructors and assisted by the Arkansas Fire Prevention Bureau.

This course included the following: watchman protection, proper methods of notifying fire departments, immediate fire fighting tactics used by watchmen and the detection of sabotage and saboteurs.

The plants and public building superintendents cooperated to such an extent that we had an attendance of over 100 members in this class.

The results we received here were numerous. The department received many requests for additional training, which was provided by fire department instructors. These courses included basic fire training methods used by the Arkansas State Fire College. Also, fire companies with adequate equipment, were organized in the plants, which greatly assisted the fire department in keeping the fire loss at a minimum.

Walter Kammann, Chief Instructor, St. Louis, Mo.: Courses in fire protection are not given generally for watchmen, for in most cases the industrial plant has its own fire chief who instructs the employees of the plant in fire protection and related subjects. When they are given, they are under the supervision of the Missouri Inspection Bureau and the St. Louis Fire Department.

The course includes inspection work; use of fire extinguishers; classification of fires and the proper extinguishers for these fires; care, use and evolutions of hose; ladder work; fire defense, gas defense and the organization of fire brigades.

We have found that such a course makes plant watchmen more fire conscious. It leads to better housekeeping in the plant and gives the men more confidence in handling emergencies as they arise.

Homer F. Lyles, Chief, Houston, Tex.: Watchmen in industrial plants are given training which is conducted under the auspices of the Houston Fire Department in charge of the Fire Defense Coordinator.

Fire defense from all angles, including the extinguishing of bombs and detection of sabotage is covered by this course.

Houston industries cooperate one hundred per cent.

In my opinion, such training tends to install greater interest in the work of these employees, at the same time making them conscious of the existing hazards created by the war.

Thomas H. Cotter, Chief, Providence, R. I.: This Department in collaboration with the Providence Chamber of Commerce Fire Prevention Committee sponsored a ten hour course of training for plant superintendents, watchmen and maintenance employees.

This course was given the status of Defense School and was greatly publicized in the local papers for weeks. In addition, correspondence explaining the course of instruction was mailed to all industrial plants, large commercial houses and institutions inviting the attendance of a representative, and enclosing a reply registration card.

The school got under way December 29, 1941, and continued five days a week for five weeks. Each day's session lasted for more than two hours.

The registration was over 450 and this large number was divided into classes of eighty to ninety each who reported for instruction on an appointed day each week for two hours of instruction for five weeks.

The course consisted of fire prevention instruction, fire sabotage prevention, incendiary bomb extinguishment and the use of fire appliances and fire equipment. In addition, movies relating to these subjects were used.

The fire sabotage prevention instruction was given by a member of the local bureau of the Federal Bureau of Investigation, and all other subjects were handled by trained members of this Department.

Diplomas were issued at the end of the course and mimeographed copies of all lectures give during the course were distributed to the registrants.

There was no trouble encountered in organizing this school. Our newspaper publicity and the personal correspondence sent the management of each individual firm or organization explained the necessity of sending a responsible representative to take the course, and the large registration amply proves the whole hearted compliance on the part of the various managements in desiring the training of their men.

In my opinion, the benefits derived from this training were twofold: The lectures were instrumental in serving as a review of the required knowledge needed in the performance of responsible protection duties, and they also served to promote a self-sufficiency in the control and extinguishment of any incipient fires that might occur in property under protection of the watchmen or plant superintendents.

C. J. Henry, Chief, Lexington, Ky.: The only training given industrial plant watchmen has been that given at the annual Kentucky Firemen's School at which time one day was set aside for plant watchmen and firemen and special instruction given them on industrial fire protection and extinguishment.

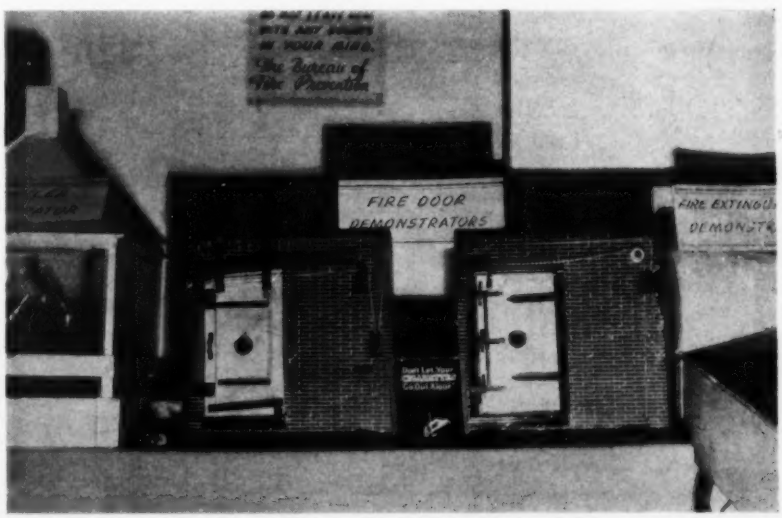
In our auxiliary firemen's school we have plant watchmen and other employees of various industrial plants and companies in attendance, and no doubt they gain valuable training in both prevention and extinguishment of fires. Some of the larger industrial companies sending men to the auxiliary firemen's school include the various large tobacco loose leaf and redrying plants and the telephone, electric and Southeastern Greyhound Bus Lines companies.

Robert McGuire, Chief, Gary, Ind.: Some of our larger industrial plants have their own private fire departments. They have been instructed by the Purdue University Fire Service Training School and the Fire Service Training School of the Gary Fire Department in the fundamentals of fire fighting.

In the smaller industrial plants, watchmen are also instructed in fire fighting and care of equipment. Foremen from these plants have taken instructors' courses from the City of Gary Fire Service Training School. The course includes hose and ladder evolutions, forcible entry work, ventilation, simplified fire department hydraulics, extinguishment of incendiary bombs, care of fire department equipment.

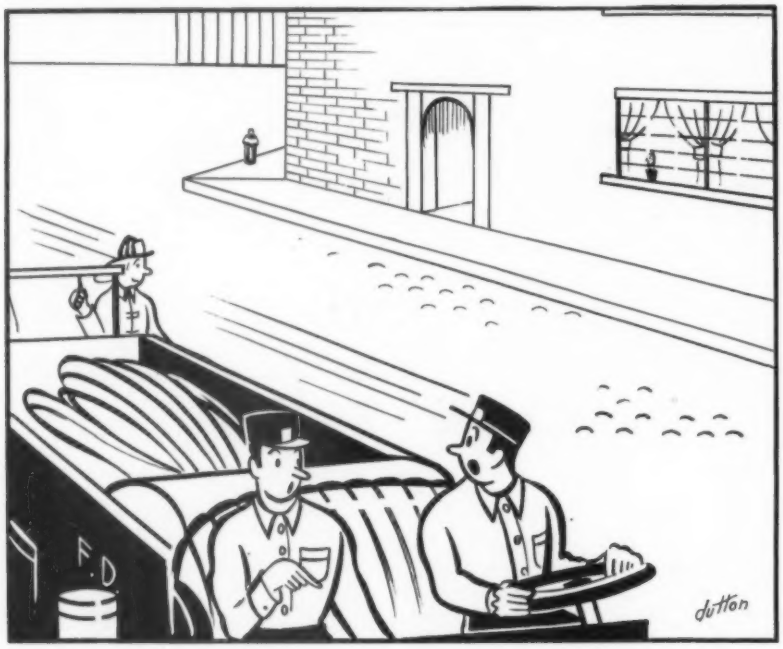
It is my opinion that especially at this time of war emergency, watchmen and also foremen should be educated in fire fighting and fire prevention, so that they in turn may act as instructors and also as fire fighters until the arrival of the regular plant brigade and the city department.

(*Continued on page* 714)



Some of the Demonstrators Used by the Cincinnati Bureau of Fire Prevention at the Industrial Plant Watchmen's School

FALSE ALARMS



"I Wish You'd Stop Telling Me How to Drive . . . You're Getting Worse Than My Wife!"

All Modern Conveniences

Every room is equipped with modern furniture, venetian blondes, tile bath, telephone, and has regular hotel service.
—Adv. in Western newspaper.

"My wife is untidy, nagging all the time, extravagant, and doesn't understand me."

"When did you meet this other woman?"

Foresight

Their cars having collided, Jock and Pat were surveying the situation. Jock offered Pat a drink from his bottle. Pat drank and Jock returned the bottle to his pocket.

"Thank ye," said Pat, "but aren't ye going to have a bit of a nip yourself?"

"Aye," replied Jock, "but not until the police have been here."

Solution

One of the WPA men spoke: "I dug this hole where I was told to and began to put the dirt back in like I was supposed to. But all the dirt won't go back in. What'll I do?"

For a long time the WPA supervisor pondered the problem. Then: "I have it. There's only one thing to do. You'll have to dig the hole deeper."

There once was a lady named Eve,
Who caused husband Adam to grieve,
When asked where she's been,
She replied with a grin,
"I've been absent without any leave!"

Old Lady: "Say, young man, seems like we stop at every other telegraph pole."

Stude Chauf: "Well, mam, this is a Greyhound bus."

Dee: "Darling, do you know that soon there will be three sharing our little love-nest?"

Earl: "No, honey, are you sure?"

Dee: "Positively. I had a letter from mother just this afternoon and she is coming to live with us next week."

Knew What He Needed

"Good morning, Mrs. Kelly," said the doctor, "did you take your husband's temperature, as I told you?"

"Yes, doctor, I borrowed a barometer and placed it on his chest; it said 'Very Dry,' so I bought him a pint o' beer and he's gone back to work."

"Did Johnny look around a bit before he married the farmer's daughter?"

"I'll say he did, but every time he did there was the muzzle of that shotgun!"

"Does your wife do all her own washing?"

"Yeah, all except her back."

Tailoring Trend

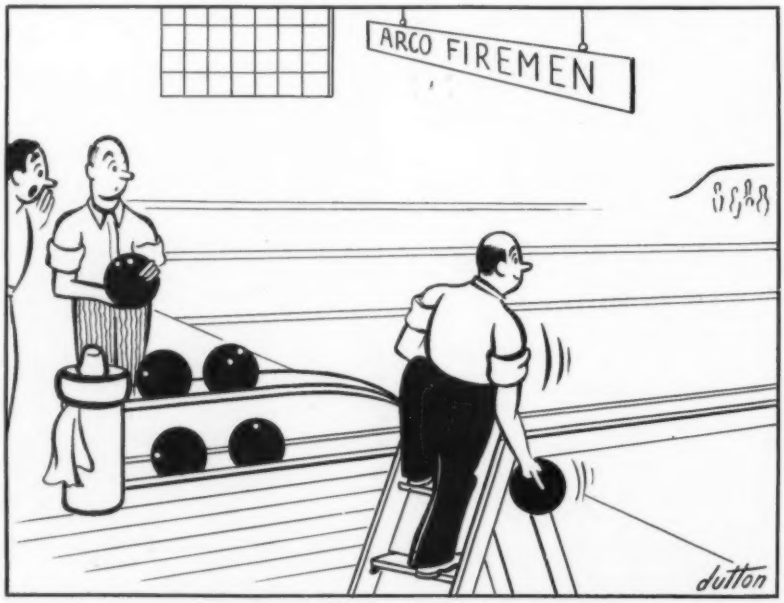
Tailors have decided that the two back pockets in men's trousers are not needed. Repeal did away with the necessity for one of them, and the depression did the rest.

"I say, Jane, isn't it time the baby said 'Daddy'?"

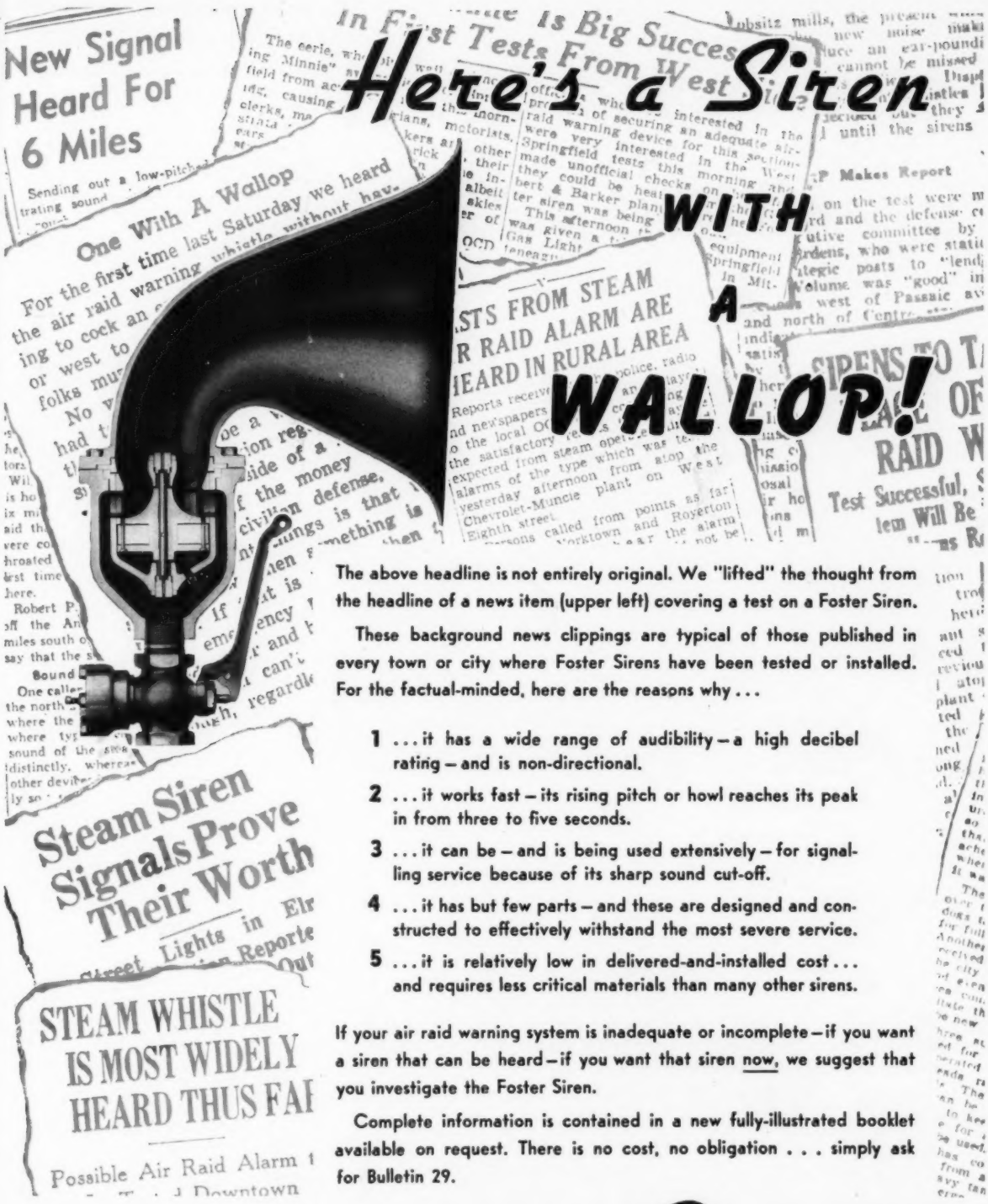
"No, John, I've decided not to tell him who you are until he gets stronger."

Wife: "Dear, what's the difference between direct and indirect taxes?"

Hubby: "The same as the difference between your asking me for money and going through my pockets at night."



"He Claims He Gets Better Aim by Using the Ladder!"


New Signal Heard For 6 Miles
Sending out a low-pitch
One With A Wallop
For the first time last Saturday we heard
the air raid warning
Steam Siren Signals Prove Their Worth
STEAM WHISTLE IS MOST WIDELY HEARD THUS FAI
Possible Air Raid Alarm
Here's a Siren WITH A WALLOP!
STS FROM STEAM
R RAID ALARM ARE
IEARD IN RURAL AREA
SIRENS TO T
RAID W
Test Successful,
lem Will Be

The above headline is not entirely original. We "lifted" the thought from the headline of a news item (upper left) covering a test on a Foster Siren.

These background news clippings are typical of those published in every town or city where Foster Sirens have been tested or installed. For the factual-minded, here are the reasons why . . .

1. **. . . it has a wide range of audibility – a high decibel rating – and is non-directional.**
2. **. . . it works fast – its rising pitch or howl reaches its peak in from three to five seconds.**
3. **. . . it can be – and is being used extensively – for signalling service because of its sharp sound cut-off.**
4. **. . . it has but few parts – and these are designed and constructed to effectively withstand the most severe service.**
5. **. . . it is relatively low in delivered-and-installed cost . . . and requires less critical materials than many other sirens.**

If your air raid warning system is inadequate or incomplete – if you want a siren that can be heard – if you want that siren now, we suggest that you investigate the Foster Siren.

Complete information is contained in a new fully-illustrated booklet available on request. There is no cost, no obligation . . . simply ask for Bulletin 29.

FOSTER ENGINEERING Company

PRESSURE REGULATORS...RELIEF AND BACK PRESSURE VALVES...AUTOMATIC STOP AND CHECK VALVES...ALTITUDE VALVES...DAMPER REGULATORS...FAN ENGINE REGULATORS...PUMP GOVERNORS...TEMPERATURE REGULATORS...LIQUID LEVEL CONTROLLERS...FLOAT AND LEVER BALANCED VALVES...NON-RETURN AND TRIPLE DUTY VALVES...VACUUM REGULATORS OR BREAKERS...SIGHT FLOW BOXES...STRAINERS...SAFETY VALVES...SIRENS

109 MONROE STREET • NEWARK, N. J.

11-FE-14

★★★★★★★★ ARMY E NAVY ★★★★★★★★

Working In Emergencies
HAS ALWAYS BEEN OUR JOB

Whenever there's an emergency—a fire, watermain break, power failure, accident, flood, hurricane, or ice storm—you find Homelite Portable Pumps, Generators and Blowers on the job. And the same holds true for war.

In this war—the greatest emergency our country ever faced—Homelite has gone all out to produce units needed for the Tank Corps, Signal Corps, Air Corps and Ordnance. Not only have we improved our pumps, generators and blowers, but we have also stepped up our rate of production tremendously—without affecting the Homelite high standards of quality.

Through the combined efforts of all the men and women at Homelite—and through your cooperation, your willingness to keep your present Homelites going for the duration so that all new units can go to the government—the Homelite Corporation has just earned the highest military honor it could get, *The Army-Navy Production Award.*

★★★★★★★★ ★★★★★★★★

HOMELITE

HOMELITE C[illegible]CHESTER, N. Y.

WHAT'S BURNING?

THE following list includes fires of $50,000 loss and over in the United States and Canada, for the month of October, 1942. These figures, compiled from the telegraphic reports, are based on estimates made at the time and are subject to later investigation and consequent revision. Taken as a whole, however, they are an approximately correct view of the losses incurred. The figures represent losses in thousands of dollars.

Month Ending October 21	Loss in Thousands of dollars
Boise, Ida.—Six buses and gas tank owned by Union Pacific Stages destroyed	50
Key West, Fla.—Steam Diesel dredge, Norman H. Davis destroyed	425
Chesaning, Mich.—Plant of Rofcraft Coach Co. destroyed	50
Port Henry, N. Y.—Sherman Park Seminary, girl's boarding school damaged	60
Rochester, N. Y.—Warehouse Reconstruction Finance Corp. destroyed	80
Rochester, N. Y.—Forty new passenger autos destroyed and 110 damaged, plus eleven trucks and 300 cases of liquor	60
Prescadero, Calif.—Milking and feed barns on Humphrey Estates Dairy destroyed	125
Providence, R. I.—Building known as Infantry Hall damaged	80
Tiffin, Ohio—Unit of Tiffin Art Metal Company destroyed	200
Nashville, Tenn.—Firestone Tire Company damaged	80
Brownstown, Ind.—Flour mill of Ewing Mill Co. destroyed	50
Terre Haute, Ind.—Ben Becker Shoe Co. damaged	60
Houston, Tex.—Houston Filling Station destroyed	60
Picton, Ont.—Lipson's General Store and building owned by Alex Lipson damaged	50
Petersburg, Ind.—Building of Winslow Coal Corp. strip mine damaged with six trucks and other equipment	80
Bessemer City, N. C.—Bessemer City High School destroyed	80
Klamath Falls, Ore.—Klamath Packing Co. destroyed	80
Belle Vernon, Pa.—Plant of Monessen Lumber & Supply Co. destroyed	425
St. Marys, W. Va.—Plant of Paramount Glass Co. destroyed	125
Eugene, Ore.—Hult Lumber Co. mill destroyed	60
Chicago, Ill.—Acme Truck Rentals Garage damaged	80
Toledo, Ohio—The tanker Transoil, the tug Whitney and the barge Seaboard damaged	90
Providence, R. I.—Our Lady of the Rosary Church damaged	65
San Antonio, Tex.—Seldana & Gar, Inc., grocery warehouse destroyed	50
Blachly, Ore.—Julius Hult Lumber Co. destroyed	65
Brent, Ala.—Cotton warehouse damaged	60
New Canaan, Conn.—Dwelling of Mrs. Webb Weeks destroyed	50
Ithaca, N. Y.—Barns at Cornell University damaged	50
Middle Point, Ohio—Grain elevator of Odenweller Milling Co. destroyed	50
Etan, Pa.—Mill of National Supply Company damaged	425
Bloomsburg, Pa.—Nine breakers at West End Coal Co. destroyed	80
Newport, R. I.—Beamdredge destroyed and wharf damaged	50
Pawtucket, R. I.—Plant of Royal Yarn Co. damaged as were plant of Northeastern Plastics Co. and Calbro Chemical Co.	225
Parkersburg, W. Va.—West Virginia Bedding Co. plant destroyed and Pure Oil Co. damaged	50
Kansas City, Kans.—Badger Lumber Co. yard damaged	125
Bellaire, Ohio—Fifteen steel box cars of a B. & O. freight train damaged	425
Astoria, Ore.—Thriftwise Drug Co. destroyed	60
Etna, Pa.—Mill of National Supply Co., Spang-Chalfant division, damaged	425
Toronto, Ont.—Warehouses and Oil storage tanks of Barrett Roofing & Materials Co., Ltd., destroyed	80
Culver City, Calif.—Metro-Goldwyn-Mayer film studio lot damaged	80

CLASSIFIED ADVERTISING

Bids Wanted. For Sale and Help Wanted, $5 per inch. Position Wanted, $2.50 per inch.

WANTED

Jobbers to sell our Morning Pride Firecoat, with Wing Freedom Sleeves. Chest Protector, Face Protecting Collar, Waterproof-Wool Wristlets. No Dirt Pockets. Made from Protected Rubber Fabric. Write today. Morning Pride Mfg. Co., 1986 Home Ave., Dayton, Ohio.

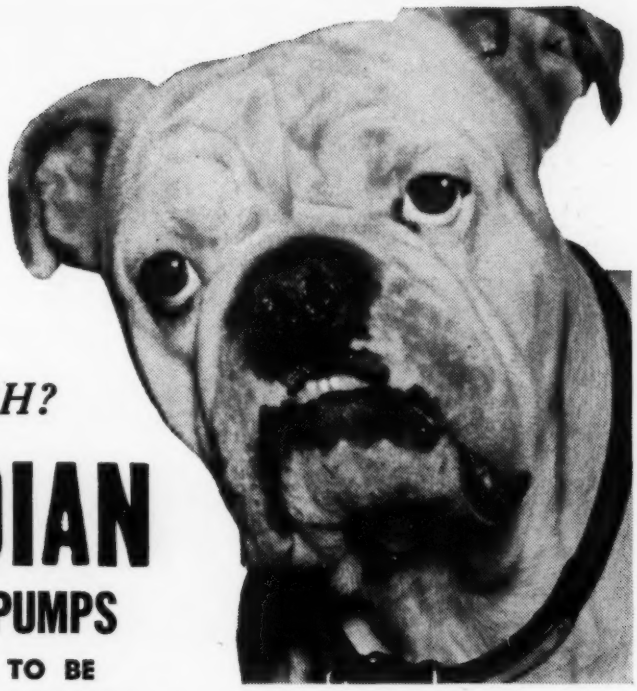
Albany, Ga.—Cotton warehouse damaged... 65
Millbury, Mass.—Paradise Theatre damaged 50
Mocanaqua, Pa.—Mine breaker destroyed... 80
Kennett, Me.—Half a business block destroyed 215
Roy, Wash.—Roy Union High School shops and heating plant destroyed..... 65
Hickman, Ky.—Mangel Co. veneer plant, main unit, destroyed..... 300
Canton, Mass.—Three story Brooks block occupied by smaller business shops on the ground floor and clubs and legion posts on upper floors..... 50
Dayton, Ohio—Reliable Foundry Co. plant destroyed 50
Guthrie, Okla.—Headhouse of Empire Elevator damaged 50
Altus, Okla.—F. W. Woolworth Co. store and Culwell Bros. clothing store, destroyed; J. C. Penny Co. store and Rainbow Cafe damaged..... 210
Jamaica Plain, Mass.—Interior of three-story Children's Museum destroyed..... 50
Oakland, Ia.—Rock Island Railroad station and Fullerton lumber yards destroyed.... 50
Haven, S. Dak.—Plant of the Review Ray Garden card parlor, food market and dwelling, shoe repair shop, telephone office destroyed 50
Wapato, Wash.—Plant of the Wapato Evaporator Co. destroyed..... 60
Freeport, Ill.—Kraft Cheese Co. warehouse and many other buildings damaged..... 425
Oakville, Ind—Grain elevator destroyed.... 65
Murray, Ky.—People's Saving Bank building destroyed 80
Baltimore, Md.—Warehouse of Baltimore Paper Box Co. damaged..... 50
Blasdell, N. Y.—Factory of Exolon Co. destroyed 50
Camdenton, Mo.—Hahatonka "castle" damaged 125
Texas City, Tex.—Showboat Theatre destroyed 60
Cincinnati, Ohio—Plant of Charles A. Maisch Co. destroyed..... 200
Nashville, Tenn.—McKenzie Milling Co. buildings, equipment, and stock grain destroyed 170
Danvile, Ill.—H.J. Lauhoff Grain Co. building damaged 125
San Antonio, Tex.—Joske's furniture warehouse destroyed and Sears-Roebuck Co. damaged 280
Barboursville, W. Va.—Barboursville Junior High School damaged..... 65
Brantwood, Ont.—Twenty freight cars of Wabash Railway destroyed..... 170

Assistant Chief Dunlap Dies

Former Assistant Chief Raymond R. Dunlap of the Fort Collins, Colo., Fire Department died on October 20, as the result of illness caused by his being overcome by smoke while fighting a fire two years ago.

Chief Dunlap joined the fire department in December, 1920. He was appointed captain on February 18, 1930 and assistant chief on January 1, 1940.

The two-year illness which ended in Chief Dunlap's death manifested itself soon after a fire in the Walgreen Drug Store in 1940, when he inhaled a considerable amount of smoke and was overcome. His last day on active duty was March 5, 1942, after which his illness confined him to his home.



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HAVE TO BE
TOUGH *to do their Job!*

Now is the Time you need plenty of these great clear water fire fighters — sturdy, hard hitting INDIANS which will handle 50 to 75% of your calls. *The War effort suffers when Fire strikes.* Stop building, roof, partition, factory fires fast with INDIANS. No chemical damage. No hose to lay. Can be made non-freezing. Send for catalog with testimonials from Fire Chiefs who endorse INDIANS.

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FRANK BRUCKER, Chief.

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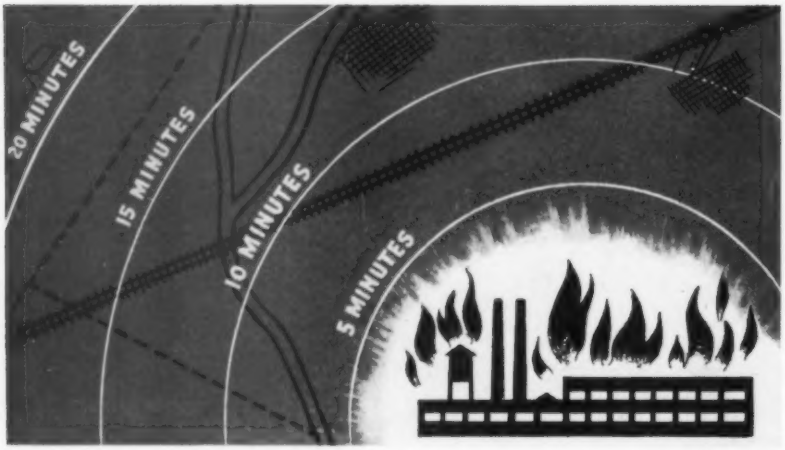


The First 5 Minutes

In many localities, construction of new war plants and worker-housing projects has upset normal fire protection arrangements by inserting a serious problem of *distance*. Local fire fighting authorities can't extend their facilities because money and man power aren't available. Yet something must be done to assure continued production from vital factories—prompt action against fire must be provided.

Here's at least one thing you can do: Warn the plant operators, urging them to take their own protective steps. In most cases, they have money and priorities which will permit them to buy equipment like the LaBour Fire Trailer—and for man power they need only train their regular workmen. The 150 GPM of the LaBour unit will be adequate for the purpose, and the 100 lbs. pressure is not too much for volunteers to handle successfully. By having such apparatus *on the premises*, they can save those precious early minutes when fire threatens.

If you'd like details for your own information, ask us to send a copy of Bulletin 49. There's no charge or obligation.

THE LABOUR COMPANY, INC.
Elkhart, Indiana, U. S. A.

The Watch Desk

(*Continued from page 692*)

forcible entry tools—only to find they'd broken into the **smokehouse.** . . . Lead (S. D.), had a $1,000,000 fire. . . . The Rev. Peter Duffee of St. Francis of Assisi Church of New York City was cited by Secretary Knox for bravery in connection with the Normandie fire. . . . Photos and other mementos of Quentin Roosevelt, son of President Theodore, were destroyed in fire at Quentin Roosevelt Post, American Legion, Oyster Bay (N. Y.) . . . Joseph Bolek, milk driver, Port Chester (N. Y.) making his rounds smelled smoke in an apartment house, broke through door, discovered fire caused by exploding lamp; an elderly man asleep nearby. Ripping caps from several bottles of milk, Joseph used the cow-juice so effectively fire was doused—and Bolek returned to his route. . . . New York City officials are still trying to locate **firebug** reported to have started at least nine tenement house fires. . . . Firemen, with police of Boston (Mass.) had ghastly job cutting hole through a silo to get at bodies of three boys who were ground to death under 25 tons of gypsum rock. . . . Fire losses in July, 1942, were 21 million dollars, or 11 per cent below same month in 1941 and 6 per cent below June, 1942. "Jerry the Irrepressible-Daly" tells the one about the "dumnkopf" members of City Police Corps of a section of Long Island City, who "rang in" at prescribed hour of 9 P.M. only to get a roaring detachment of fire engines in reply. Uh huh—they had used a public fire alarm box in error. . . . We're glad to hear that Deputy Chief Johnny Gunn of the N. Y. F. D. is recovered from a severe illness. . . . Rowland Doughty, ex-chief, Briarcliff Manor (N. Y.) F. D. writes us he has joined the fire department down at the Canal Zone. Congratulations Rowland! . . . Arthur Chapman, one-time member of Larchmont (N. Y.) Fire Patrol, was pinched for impersonating an officer by wearing uniform of his old Company when he tried to gain entrance at a Torrington (Ct.) factory. . . . When two children fell into a deep sewer in Memphis (Tenn.) firemen battered through 8 inches of concrete to reach them in time to save their lives. . Here's a case where a dropped tool started a fire. Two men repairing leaky gasoline pump in Department of Sanitation (N. Y. C.) garage, were badly burned when one dropped screwdriver, which gave off spark that ignited fuel in pump. Paper didn't say whether or not the "lunch whistle" had just blown! . . . Congratulations to B. R. Townsend, Chief and Harry Lockwood, President, Hartsdale Vol. F. D. (N. Y.), on their clever little house-organ, **"The Siren."** Live paper of a live outfit! . . . While we're on the subject of house-organs, we chuck a few more orchids to the **"Phoenician News"**—published by the Phoenix Society of San Francisco—a gang of "buffs" that's now up to its Plimsol mark in war defense work. . . . Fire in porch of large dwelling in Tarrytown (N. Y.) threatened to make "biggest family" in the Village homeless. House is occupied by Mr. and Mrs. Leighton Brown and 16—count 'em—of their children. . . . Another old reader of thisyere sheet, Ex-Chief John Van de Water, who deserted Westchester County

(N. Y.) for wilds of Omaha (Neb.) and "was done fer keeps with the fire business" has succumbed—and is now a panting auxiliary of said Omaha F. D. . . . Chief Alex B. Cunneen, Larchmont (N.Y.) is trying to hold down two chiefs jobs at once. Besides retaining title as "Chief" of Larchmont's department, he is in charge of fire fighting at Ft. Slocum in New Rochelle (N. Y.)

* * *

Divination?—Or Good Guessing!

Chief J. W. Roher, Granville (O.) F.D. writes us about how Chief Stan Shaw of the Newark (O.) department is on the job. Seems that while driving through that city not long ago he (Chief Shaw) noticed a building that hadn't been inspected recently and said to himself **"when I come back I'm gonna look that place over."** Well, an hour later he returned and, picking up the proprietor of the place, began his inspection, starting with the 3rd floor, where he found all was well. Thence, to the second floor, with the same result. On the first floor, however, when he opened a door of a room formerly used for refrigeration purposes but now a storeroom for second-hand clothing, he was almost floored by a blast of hot smoke. Uh huh—there was fire. Fast work by the Chief, however, located the trouble in a bin of old clothing and enabled him to extinguish the blaze unaided.

* * *

The Captain Likes Dessert!

We allus like kind words, specially when they're said about us, so thanks—Captain Frank M. Riom, Rockville Center (N. Y.) F.D. The Captain writes: *"The Eureka H & L Co. No. 1 of Rockville Center, Long Island (N. Y.) now has 25 of its active members in the armed forces. The Company received a new American LaFrance 85 ft. steel aerial ladder truck 2½ years ago. The old wooden aerial hook & ladder truck that the men now in service used to ride on has been broken up and placed on the scrap-pile. These men will now probably get the truck in the form of guns and bullets. Incidentally, I wonder if the 25 men in the Service is a record among Fire Companies limited to 60 active members? I always read your column and consider it the dessert of the Magazine—and Boy! do I like dessert! See you when she blows!* Can any of the Brothers furnish a better service record than these Vamps of Eureka H. & L.?

* * *

How to Perfect a Blackout!

Out in Nezperce village, near Lewiston (Idaho), only one light—in a battery shop—showed through the blackout.

It didn't shine long.

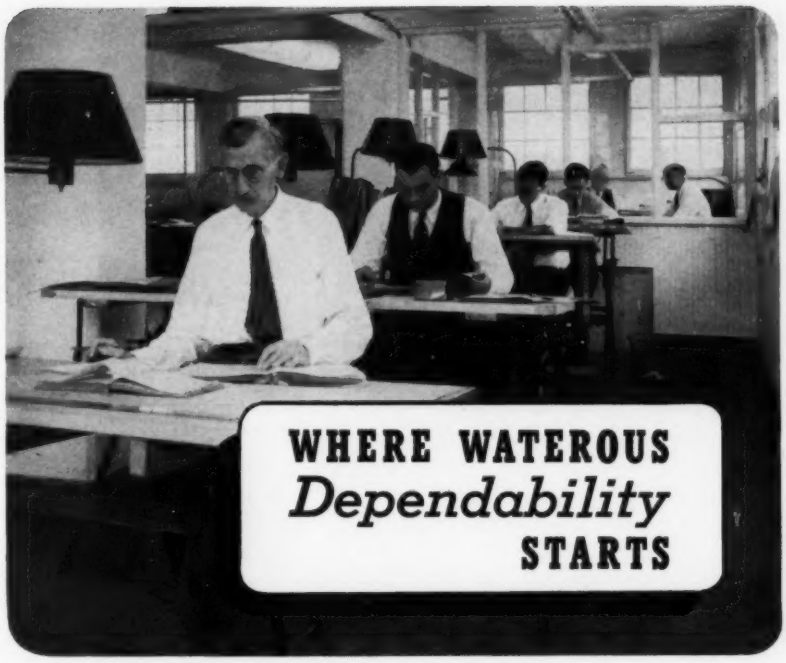
An air raid warden called in to Chief Warden Glen Miller to make a report on a shooting.

"When we black 'em, they stay blacked," commented Miller, filing the report.

* * *

Nels Jensen a Bit Burned Up!

Out in Omaha (Neb.) Nels Jensen whose house was damaged by a blaze, was burned up about the F. D. He charged that firemen overlooked a hydrant 70 feet from his burning house, went to one a block away, ran short of hose, wated for another truck and were 45 minutes getting lines into operation. No, No, Nels!—you can't make us believe *that* about the Omaha Brothers!



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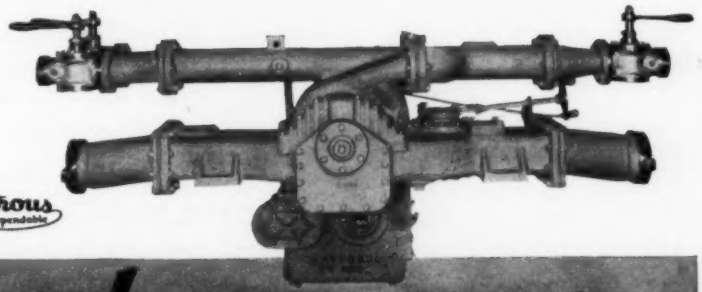
Dependability is found in every part of Waterous pumps. Specify WATEROUS on ***your*** fire apparatus.

WATEROUS COMPANY ★ ST. PAUL, MINN.



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THE upper halves of the pump and transmission case are bolted to the lower half by one horizontal flange only, whereas in others the pump case bolts to a horizontal as well as two vertical flanges, and transmission upper half is not removable. It is not necessary to separate two vertical flanges from the upper pump casting in order to remove the latter.

Ward LaFrance pumps further require only one check valve in suction pipes, the transfer valve taking the place of the second check usually employed. Transfer valve location in lower housing furthermore simplifies disassembly.

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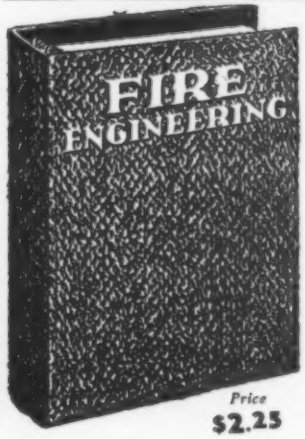
New York Branch - 139th Street and Southern Boulevard

"Fire Apparatus of Quality"

ELMIRA HEIGHTS, NEW YORK



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FIRE ENGINEERING

24 West 40th St., New York, N. Y.

Correspondence

Sirens Silenced for the Duration

To the Editor:

On October 24, 1942, at 12:01 a. m., all fire companies' sirens were silenced or "the duration" in Rochester, N. Y. This move was taken to eliminate confusion in sounding of public alarms for actual or practice air raid warnings.

Fire equipment is permitted to use bells or horns in answering all alarms of fire. The sirens are not to be removed from equipment because they will be used to sound air raid alarms and all-clear signals.

While the city regulation continues in operation until July 1, 1943, effective date of the State War Emergency Act, the Monroe County order is "for the duration of the emergency or unless countermanded."

Yours truly,
RAYMOND LEE,
Auxiliary Fireman,
Rochester, N. Y.

Conductivity of Discharge from Carbon Dioxide Extinguishers

To the Editor:

I have read with great interest the article in the September issue of FIRE ENGINEERING on the conductivity of discharge from carbon dioxide extinguishers.

The conclusions of the test and the recommendations indicate that these extinguishers can be used with little danger on electric fires when the recommendations are adhered to.

From my experience in using fifteen pound carbon dioxide tanks and from my slight knowledge of electricity, I believe that an appreciable hazard exists, about which very little has been written. In view of this experience, I submit the following for your consideration and approval.

To begin with carbon dioxide is one of the primary extinguishing agents used by fire departments to combat electrical fires. The fifteen-pound size can be considered standard for portable equipment. The weights of empty tanks range from thirty-two to forty-five pounds, thus assuring absolute contact with floor or ground when in position for operation. The method of operation requires the user to hold the nozzle (horn) with one hand and operate the valve with the other hand. No recommendations, to my knowledge, require installations to be made "electrically dead" before applying the extinguisher.

The hazard is presented when the operator is in contact with the valve or any metallic part of the extinguisher. Should any other part of his body come in contact with any electrically charged object, a complete circuit is formed and severe shock, burns or electrocution can result, even by contact with comparatively low voltages. This is due to the manner in which the operator solidly grounds himself by coming in contact with the metallic tank which in turn, due to its weight, makes solid ground when in position for operation.

This hazard can possibly be removed by the provision of a "rubber shoe" or some other means of insulating the tank from contact with the ground. If this proves to be impractical, due to the necessity of grounding off static electricity generated in the operation of the appliance, the only other recommendation I have to offer is the use of rubber gloves on all electrical fires, as the use of a non-conductive valve would not provide the desired margin of safety.

This letter is not the result of my conducting any test. It is submitted for your investigation and approval purely in the interest of safety to firemen. I am sure any consideration given to its contents will be appreciated by the profession.

Yours truly,

JAMES ROBERTSON,
Elizabeth, N. J.

Firemen Battle Roofing Plant Fire

One of the most serious fires the Toronto, Ont., Fire Department has had to fight for some time occurred when the tar plant of the Barret Company, located in the east end of the city and in the oil refinery district, was destroyed by fire which started from some unknown cause.

The first alarm was sent in by the superintendent of the plant. This was received at the fire department switchboard at 6:35 p.m. and when the first sections arrived they found the flames shooting up over 150 feet into the air and the whole downtown district of the city covered by a heavy cloud of smoke. The district chief sent in a second alarm which was received at 6:39. This brought five engine companies and a number of emergency wagons.

The fire was fought on the east side of the burning plant. Impelled by a gale from the east, the smoke was driven across the city for about seven miles.

Eight lines of 2½-inch hose were used on the east side. Water pressure in the private mains of the company was approximately 200 pounds. Four lines on the south side were played from the ground. Three heavy streams from the east side were kept on two large tanks and prevented a serious explosion.

Four lines were laid on the west side and used to kill a fire in several box cars on the plant's siding and to prevent the flames from entering the other plant in which great amounts of roofing and materials were stored. The firefighters were successful in stopping the fire from entering this building.

The apparatus responding on the second alarm had great difficulty in getting through because of the thousands of motorists who drove to the scene. Extra police were called out to keep the crowd under control.

By 8:30 p.m. the fire was controlled. Hardly any flames were visible, but the dense clouds of smoke still issued, and the men kept the three streams playing on the tanks to keep them cool. At 9:15 p.m., the second alarm sections were sent back to their quarters and the fire handled by the companies who arrived on the first alarm. Four lines were used until midnight and two left to cover up until the fire was completely out at 3:36 a.m.

The loss to building and contents was approximately $50,000.

JOHN KARL LEE.

AKRON PRODUCTS
Protect SHIPPING

U. S. Coast Guard Equips New Fire Boats With Akron Water Guns

The above photo shows one of a hundred new fire boats bought by the U. S. Coast Guard to help protect shipping along our coast lines.

These boats have no propellers which might become damaged by debris but are propelled by reaction of the stream from the stern water gun. Engines have the dual role of pushing the boat forward and supplying water under high pressure to the nozzles.

Akron Brass Mfg. Co., Inc., is furnishing both the bow gun and the stern gun to each boat. They are all made on the Grant Multiversal Principle. This is just one more example of how AKRON PRODUCTS are helping to win the war.

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Drop Forged Rocker Ring Couplings
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For a wide range of Akron fire protection appliances see Free Illustrated Catalog No. 40

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Style D. P. 100—2000 G. P. M.

One of the many items our Company has and is producing for fire protection service.

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Trade HOSE BRASS GOODS WB LINE THE WOOSTER BRASS Co. WOOSTER, OHIO Mark

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The Wooster Brass Company
Wooster, Ohio

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, OF FIRE ENGINEERING, published monthly at New York, N. Y., for Oct. 1, 1942.

State of New York } ss.:
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared I. H. Case, who, having been duly sworn according to law, deposes and says that he is the business manager of the FIRE ENGINEERING and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Case-Shepperd-Mann Publishing Corp., 24 West 40th Street, New York, N. Y.; Editor, Fred Shepperd, 24 West 40th Street, New York, N. Y.; Managing Editor, Fred Shepperd, 24 West 40th Street, New York, N. Y.; Business Manager, I. H. Case, 24 West 40th Street, New York, N. Y.

2. That the owner is: Case-Shepperd-Mann Publishing Corp., 24 West 40th Street, New York, N. Y.; I. H. Case, 24 West 40th Street, New York, N. Y.; Fred Shepperd, 24 West 40th Street, New York, N. Y.; Karl M. Mann, 24 West 40th Street, New York, N. Y.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

I. H. CASE,
Business Manager.

Sworn to and subscribed before me this 1st day of October, 1942.
[Seal]

WILLIAM H. TOPHAM,
Notary Public.

(My commission expires March 30, 1943.)

WAR FARE

Alarms and Discussions Clipped and Culled from the War News of the Day, of Interest to the Fire Service.

Roi B. Woolley

Hot from the "Front"

Greater New York Civilian Defense Volunteer Office announced that 2,000 women are needed as telephone report clerks in N. Y. F. D. emergency central office. . . . Incidentally, Sept. 1st, New York City had enrolled 56,160 auxiliary firemen, wanted 40,000 more. . . . War Production Board, Washington, has designated the Chemical Warfare Service as the only agency to authorize the sale and delivery of incendiary units for demonstration purposes. . . . Wing Commander Max Aitken, Lord Beaverbrook's son, told how his squadron had shot down a German super-bomber believed able to carry a 1,000 pound bomb (or equivalent in incendiaries) from Brest to New York and make return trip to France. . . . During August, formations of "crop-raiders" dropped incendiaries and flares outside British towns in effort to destroy crops. . . . London has released a new film, **"Fire Raid on London,"** which is said to outdo the Hollywood spectaculars. . . . Greenwich (Ct.) folks got their ire and themselves up when second early morning alert jerked them awake at 4 a.m. . . . New York State claims to have 14,680 auxiliary deputies skilled in handling firearms, listed as auxiliary deputy sheriffs. Priceless books, some of them irreplaceable, were destroyed when German raider dropped explosive and incendiary bombs from 100 feet on quarters of Cambridge Union, famous British debating society. . . . The OCD has adopted a "quart-sized air horn" which, it is said, can carry an air-raid warning over area of one-quarter of a square mile. . . . Compulsory fire watching by women from 21 to 45 years of age was inaugurated in August in England on belief Germans would step up attacks. . . . The War Department, Washington, has set up a new explosive safety branch to formulate and enforce safety measures in munitions plants with headquarters in Chicago. . . . Frank Schoor, Queens, N. Y., broke both legs when he fell into his basement during blackout. . . .

* * *

Answer to a Question

To J de V who reads this column regularly: "According to the information in hands of the editor, the first American auxiliary fireman to be killed on duty in this country was Wm. Conklin, 29, of 40 Slater St., Paterson, N. J. As member of Paterson's civilian protection organization Conklin suffered fatal injuries and a regular fireman was also injured critically, in an early morning collision between a fire truck on which they were riding to a fire, and an automobile. If we are wrong, will some reader correct us?

* * *

False Teeth Menace!

Those artificial bicuspids, molars and whatnots—the oral "China Clippers"—are a menace in an air raid, according to Dr. Lloyd H. Gaston, chief, Emergency Medical Corps, Lansing (Mich.), who says they should be removed from

the mouth and put where they'll be safe, because the vacuum created by a bomb explosion could cause a victim to swallow a removable bridge. Gosh! Something else to worry about!

* * *

Down Baltimo' Way

Scribner Otis Smith tells us that Baltimore (Md.) fire fans (s'pose he means auxiliaries) have been riding regular apparatus for over 6 months to give 'em experience so they can "take over" pumpers when delivered. Due to large numbers participating, each "buff" takes a 2-hour turn one night each week. He remains in firehouse during that time, hops the "wagon" when it rolls and works alongside firemen when fire is reached. He wears a white military helmet and an arm band as identification. Thanks, Otis.

* * *

On the Fire Front

Fire and explosions continue to take toll of vitally needed munitions and war necessities. Here are some accounts taken at random from the news of the day:

KEARNY, N. J.—A trailer-truck containing 2,000 gals. of cleaning fluid plunged off main highway, killing driver, causing fire that destroyed large quantity of cork used in war manufacture at the Congoleum-Nairn plant.

TRENTON, N. J.—A forest fire burned out more than 200 acres of woodland, came within 300 yards of Hercules Powder Plant before being checked. Cause? You guess.

NEW JERSEY.—Other forest fires at Lake Mohawk, Bloomingdale, West Milford Township, Ogdensburg, caused serious losses in state. One of worst fires for a time threatened naval air base at Lakehurst (N. J.) being controlled after it had burned over 1,000 acres.

DOVER, N. H.—Fire, caused by "carelessness," swept mill of American Woolen Co., forcing plant to shut down for third time in 18 months, delaying manufacture of cloth for Army, Navy.

METUCHEN, N. J.—Explosion and fire destroyed small building at plant of New Jersey Fulgent Co., killed three men, sent two others to hospital, and injured others less seriously. F. B. I. investigating. Company manufactured flares.

HAVRE DE GRACE—Twenty-eight railroad tank cars loaded with precious fuel burned after 33 cars of an 80-car B. & O. train were derailed. "A coupling supposedly broke."

LANSING Mich.—An explosion ripped part of Fisher Body Corp. plant, killing at least three, injuring others. Cause—believed to be spark from acetylene torch used in repairing underground gas tank.

KEYPORT, N. J.—For second time in two weeks, trestle of Seashore Branch of Central Railroad of New Jersey was damaged by "unexplained fire" which burned ties, buckled rails on structure.

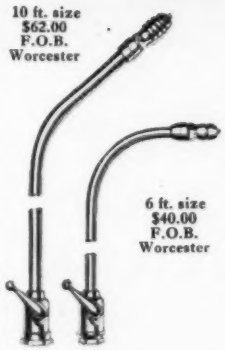
HANOVER, Mass.—Two were killed in explosion at plant of National Fireworks Co. now engaged in production of explosives for government.

LONDON.—Explosion of a bomb, that had been considered a dud for 13 months, killed over 28, injured scores, flattened out three five-story apartment houses. Bomb had worked its way through soft sand to get directly under the buildings.

RADFORD, VA.: Two workmen were killed, 5 others injured in fire at Radford Ordnance Works, engaged in making of smokeless powder. Cause "undetermined pending investigation."

Running *Oil Fire wiped out . . .* *with* ROCKWOOD WaterFOG

30 seconds to wipe up this dangerous running oil fire with WaterFOG



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Type N-20
¾" size $15.00
1" size $15.00
1½" size $25.00
2½" size $35.00
F. O. B. Worcester

Comes in four sizes to fit existing hose lines. Projects a larger WaterFOG pattern greater distance by a new method.

Rockwood WaterFOG Applicators

You will find many uses for the handy Rockwood WaterFOG Applicators. Use them singly or in multiples of two or three to quickly clean up large area fires of flammable liquids such as fuel oil, kerosene, mineral spirits, incendiary bombs, etc. Protect storage tanks from ignition by radiant heat. WaterFOG will keep exposed materials cooled below their ignition point. Or use the Applicators to fight fires in confined areas such as cellars. Poke the Applicator thru a window or other opening and watch smoke and flame disappear as WaterFOG cleans up. Water FOG works just as effectively on ordinary combustibles.

Rockwood N-20 WaterFOG Nozzles

You can use WaterFOG on large fires impossible to extinguish with the low range of other types of fog or spray nozzles. You have fire fighting distance of 50 feet at 100 lbs. pressure with the 2½ inch size of the Rockwood type N-20. This is possible by the use of an advanced new method developed by the Rockwood research engineers known as the *internal impingement* method of generating and projecting fog. *Low* velocity WaterFOG particles with their greater extinguishing action are projected right into the heart of the fire by means of the proper amount of *high* velocity WaterFOG induced into the low velocity pattern. For use on fires in flammable liquids and oil filled electrical equipment.

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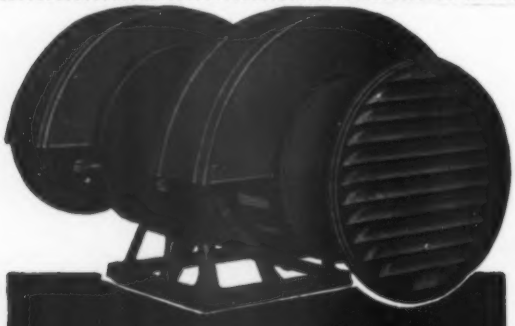
PACIFIC MARINE SUPPLY COMPANY

SEATTLE, WASHINGTON

☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆



STERLING MODEL "M"

GENERAL ALARM SIREN

You Can Depend On It *ALWAYS*

An
AIR RAID ALARM,
TOO!

The Sterling Model "M" Siren, while primarily built for fire alarm signals, is particularly well adapted for the emergency duties attendant on National Defense. Such a duty is the Air Raid Alarm.

This sturdy public alarm with its shrill, penetrating and distinctive vibrations meets and solves both problems.

Rugged and dependable — it is built to deliver 24-hour service. Its performance has never been equalled by any of the other sirens on the market today!

Write for detailed literature

STERLING SIREN FIRE ALARM CO., Inc.
55 Allen Street Rochester, New York

BOSTON, MASS.: According to N.F.P.A., fire struck 53 of nation's war plants during 6 months to July, 1942, killing 114 persons, injuring 31 others, causing losses far in excess of $2,500,000.

* * *

Iowa Notes

Clipper Robinson shoots the following:

Hiawatha, Kans.: C. C. Isley, Dodge City (Ia.) candidate for the U. S. Senate, interrupted campaign tour to give a hasty lesson in the art of fighting a prairie fire. Deponent saith not who got the lesson. . . .

Wadesboro, S. C.: A burglar broke into a barber shop here and stole $225 while firemen fought a fire next door. No wise cracks, please!!

* * *

Standard Blackout Auto Lights?

The press recently carried stories that a "standard" blackout lights had been devised for all autos. The units are about 4½ inches in diameter, are dustproof, waterproof and mounted on a bracket, providing adjustment for "aiming" in accordance size of the vehicle. They operate from a special switch which automatically disconnects the normal lighting and are so simple that any mechanic can install them.

It develops that this information was inspired by an address made by H. C. Mead, General Motors lighting expert, before a wartime conference of the nation's leading illumination engineers.

Well, we hope Mr. Mead has the right lights—and we devoutly hope they'll officially be made "standard", but in spite of the press story, we have yet to have any advice from any central authority on any sort of "standard" blackout lighting. Meanwhile regular, volunteer and auxiliary firemen in these 'yere parts are going round in circles (and many of 'em on foot too) trying to dope out what sort of blackout lighting equipment they should have.

* * *

Have You Looked Down Cellar, Chiefs?

Surprising bit of news was that which came out of New York City in connection with scrap metal drive. That was the disclosure made by Commissioner and Chief Walsh, of New York City F.D. that although his department has not used horses in more than 20 years, 42 firehouses of his city alone yielded up 21½ tons of scrap dating from the horse-age, in form of feed troughs, drain pipes, plumbing used in old stalls.

Gosh! We're wondering what's gonna come out of the scores and scores of other metropolitan fire houses! Or has the "housekeeping" been a bit more vigorous in these other places? Anyway, it's a good suggestion to chiefs.

* * *

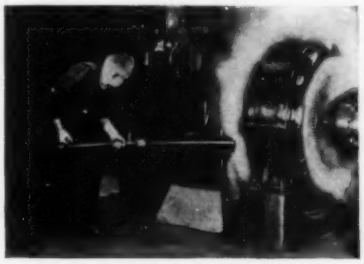
New Form of Sabotage?

A contrib' sends us story about possible new form of sabotage. At least, A. A. Ulrich, manager Massillon (O.) water company thinks it may be. The whole thing is disclosed by offer made in local paper by Ohio Water Service Co. (Massillion) to pay $500 reward for arrest and conviction of "the person or persons" who placed the entire city in peril one day by opening nine fire hydrants in two sections of the city. Police found the hydrants shooting out a total of about 9,000 g.p.m. so lowering the pressure in mains throughout city that general conflagration was threatened. . . .

Manufacturers' Announcements

100 Pound Carbon Dioxide Engine

The American - LaFrance - Foamite Corporation of Elmira, New York, has developed a new 100-pound carbon dioxide engine for use on electrical fires.



Anti-Statik horn in use on Fire

This "Alfire" engine is equipped with an Anti-Statik horn to protect the operator from static charge. It is designed for perfect balance at wheeling height, has a third swivel wheel for easy maneuvering, and a retaining latch which releases the horn instantly, yet holds it firmly in place when not in use.

Engine in Wheeling Position

It is recommended for fires in flammable liquids, alcohol storage, electrical machinery, and for other class "B" and "C" fires. It smothers fire instantly with carbon dioxide gas, which expands upon discharge to 450 times its stored volume. It is non-corrosive, non-poisonous, odorless.

It bears the approval of the Underwriters' Laboratories and the Associated Factory Mutual Laboratories.

Acme Mask Approved by Bureau of Mines

The Acme Full Vision All Purpose Gas Mask, manufactured by the Acme Protection Equipment Company, Inc., of 3616 Liberty Avenue, Pittsburgh, Pa., has been approved by the Bureau of Mines, bearing Approval No. 1435.

The Acme Full Vision All Purpose Mask was approved for respiratory protection in atmospheres containing sixteen per cent or more of oxygen or in which a flame safety lamp will burn, and not more than two per cent acid

(*Continued on page* 711)

YES! ★ ★ ★ ★ YOU CAN STILL BUY

MIDWESTERN

FIREMEN'S CLOTHING

Some of our customers have gathered the impression that due to the war protective clothing cannot be purchased. Naturally, the needs of America's armed forces come first, but we are still able to ship many items, frequently with little or no delay. This is partly due to the sharp stepping up of our production. Please order needed articles as far in advance as possible.

COMBINATION SUIT -:- DETACHABLE LININGS

MIDWESTERN FIREMAN'S COAT

This is one of our most popular outfits. In use in hundreds of cities throughout the country. Rubberized coat and Bunker Pants with detachable wool linings. Flexible elastic inner sleeve for wrist, keeps out water, cold and sparks. This wool lining can be added to any Midwestern fire coat at small additional cost. Snap buttons make it easy to attach and detach quickly.

MIDWESTERN BUNKER PANTS

These Midwestern pants are equipped with a removable wool lining which have safety snaps that can't catch on anything. Cloth crotch pads for pole sliding. These pants, with coat above, are Midwestern's outfit No. 101.

Midwestern No. 20

FIREMAN'S CLOTH COAT

At the present time, we have a supply of material No. 20 in stock for our Midwestern 401 coat. Can take care of such orders at once.

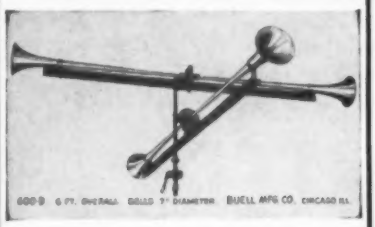
MIDWESTERN MFG. CO.
MACKINAW, ILL.

EDDY
Fire Hydrants

Are given preference by so many fire protection and water works men because they know that more than half a century of experience goes into their manufacture and they embody valuable and exclusive features.

Write for the FACTS.

EDDY VALVE CO., Waterford, N.Y.



BUELL AIR RAID WARNING SIGNALS

BUELL Air Raid Warning Signals use the most simple and effective sound-producing principle known today, a patented BUELL feature. They transfer air energy directly into sound, giving a powerful, dependable warning of high attention-getting value. 50 units of the 600-D type shown above have been installed in Portland, Oregon . . . 10 suburbs of Chicago have installed this unit.

Buell Air Pressure Warning Signals can be used for alarms and special purpose signaling in industrial plants, ship yards, etc. Ideal for coding to call volunteer fire departments.

Write or wire for descriptive literature, NOW!

BUELL MFG. CO.

2995 Cottage Grove Ave., Chicago

WENTWORTH FIREMAN'S UNIFORM CAPS

UNION MADE PROMPT DELIVERY

No. 342

Wentworth Fireman Caps are made of the Highest Quality Standard Materials available by the Best Skilled Union Craftsmen. Our 45 years of experience and skilled workmen guarantee you AMERICA'S GREATEST CAP VALUE in all WENTWORTH FIREMAN CAPS.

No. 441

Wentworth Fireman Caps are made in all the New and Standard styles. Bell Top, 8-Point, Military, etc. Write direct for latest circular and prices or see your local dealer.

WENTWORTH-FORMAN CO., INC.
578b Washington St., Boston, Mass.

Manufacturers

Fireman Cap Specialists for Over 45 Years

Ogborn Chief at Columbus, Ohio

C. W. Ogborn has been appointed Chief of the Columbus, Ohio, Fire Department in the absence of Chief Edward P. Welch, who has secured a leave of absence to enter the U. S. Army.

Chief C. W. Ogborn

Chief Ogborn entered the service in 1910. He became a lieutenant on April 13, 1916, a captain on February 16, 1920, and assistant chief in 1926.

LARRY F. DONOVAN.

Control on Air Raid Protective Devices Tightened

Requests for the use of critical materials to be used in air raid protective devices for war plants will be granted in the future only after consultation with the War Production Board's Resources Protection Board. The W. P. B. said that this decision had been made in the face of increased nation-wide demand for blackout equipment, dim-out lighting fixtures, alarm systems, fire extinguishing equipment, steel fences, camouflage paint and other items using critical materials.

"This demand has grown to huge proportions and cannot possibly be met without diverting quantities of steel, brass, copper and other important metals from direct war uses which are more immediately urgent," said the W. P. B. announcement. "The possibility of occasional bombings cannot be allowed to curtail unnecessarily the flow of critical materials to plants now making vital military items.

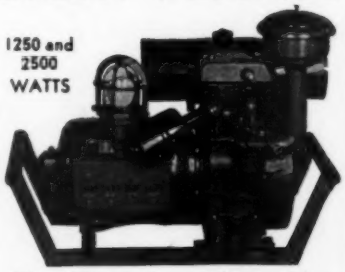
"However, it is important to achieve a maximum of protection where this does not interfere with the need for critical materials. Consequently, owners and operators should make every effort to install protective equipment which does not involve such materials."

R. S. Bass Chief at Fort Myers

R. S. Bass, former Assistant Fire Chief of the Fort Myers, Fla., Fire Department, was promoted to the rank of Chief of that Department to succeed W. R. Anderson, who resigned. There are seven paid men and twenty-five volunteers at Chief Bass's command.

"U.S." PORTABLE LIGHT PLANTS

1250 and 2500 WATTS



This 1250 watt, portable unit has been designed expressly for fire department use. It is small, light, compact and equipped with carriers for easy portability out on the job. Air-cooled 4-cycle engine 2⅞" bore x 2⅞" stroke. 2.4 H.P. 2 gallon fuel tank. Quick starting. Also 2500 watt size.

LARGER SIZES AVAILABLE

Write for Catalog.

UNITED STATES MOTORS CORP.
430 Nebraska Street, Oshkosh, Wis.

Keep Your Batteries ON THE ALERT

WITH A **TUNGAR TWO-RATE CHARGER**

FOR 40-AMP. CHARGING OF 6-VOLT OR 12-VOLT BATTERIES

Model 6RB84B5 Charger

The Tungar Two-Rate Charger will completely recharge a run-down battery quickly and safely. Sizes are available for 6- and 12-volt batteries. The initial high-rate charge of 40 amperes automatically drops to a low finishing rate of 16 amperes for the last 20 per cent of the charge, then automatically cuts off.

Portable—can be easily moved to any desired location. Compact—requires less than one square foot of floor space. Complete—furnished with long D-c. leads and clips, a long A-c. lead which plugs into any convenience outlet of the proper rating, and two 99X45 Tungar Bulbs.

For more information, just write Section A-1125-58, Appliance and Merchandise Dept., General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

Manufacturers' Announcements

(*Continued from page 709*)

gases, organic vapors, or carbon monoxide (see "Caution" on canister label regarding hydrocyanic acid gas); three per cent ammonia; or two per cent total of poisonous gases when more than one class is present; and smokes from ordinary fires. This approval also applies to limited protection against dusts, fumes, mists, and fogs, but not to protection against the toxic smokes of warfare.

Victory Stirrup Pump

F. Schumacher and Company of 60 West 40th Street, New York, N. Y., recently announced its new Victory stirrup pump, which is made entirely of

Victory Stirrup Pump in Operation

wood and plastic. Light in weight, durable, attractively finished in red, the pump costs considerably less than the metal pump. In addition it contains no critical materials. It is expected to sell for approximately $3.00, and bears the approval of the New York Fire Department.

Catalog Published

The Homelite Corporation of Port Chester, New York, has recently published a very attractive, illustrated folder describing the various uses to which Homelite portable pumps, generators and blowers have been put in war time.

In the folder the company points out that prompt deliveries for other than military and defense uses cannot be made at the present time, and this calls for a sacrifice on the part of those who normally use these units.

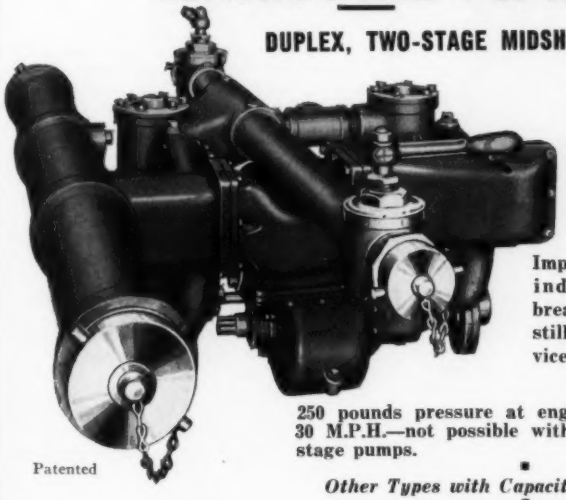
Hersey Company Changes Name

Effective November 2, 1942, the name of Hersey & Company, Inc., 2021 Minor North, Seattle, Wash., has been changed to American Ventilating Hose Company, specializing exclusively in the manufacture of 3-inch to 24-inch diameter flexible ducts of several tvpes for ventilation and fume removal.

Barton Front Mounted — AMERICAN-MARSH PUMPS — Barton-American Midship

FIRE APPARATUS CENTRIFUGAL PUMPS

DUPLEX, TWO-STAGE MIDSHIP MOUNTED



Patented

High Pressure performance entirely unaffected when unit used to pump gritty water.

•

Impellers mounted on individual shafts—breakdown of one pump still leaves one for service.

•

250 pounds pressure at engine speed equal to 30 M.P.H.—not possible with conventional two-stage pumps.

•

Other Types with Capacities to 750 G.P.M.

•

WRITE FOR BULLETIN 8731F

•

AMERICAN-MARSH PUMPS, INC., Battle Creek, Michigan

Pumps—and pumps only—since 1873

Specify HALE

FIRE PUMPS — HALE — CONSHOHOCKEN, PA.

—Hale Fire Pumps are being made in greater quantities than ever before.

And Hale standards of workmanship are constantly maintained by the use of accurate, modern machine tools and production equipment, coupled with rigid inspection.

•

Write today for the Catalog and Folders on the complete line of Hale Pumps.

HALE FIRE PUMP COMPANY

CONSHOHOCKEN, PA.

JANESVILLE QUALITY FIRE COATS

Our coats are giving excellent satisfaction in most of the large fire departments throughout the U. S. and

THERE MUST BE A REASON WHY SO MANY FIREMEN INSIST ON JANESVILLE QUALITY

Rubber and Duck Coats and Bunkers, Boots, etc.

We also manufacture White Striped Safety Coats.

JANESVILLE APPAREL CO.
JANESVILLE, WIS.

"ALL AMERICAN CHOICE" INVINCIBLE NOZZLES PREPARE — PROTECT

Portable equipment is the watchword of today.

Buy—

INVINCIBLE NOZZLES

and enjoy the benefits derived by experience of the pioneers in the nozzle field.

Fig. 403

F. N. McINTIRE BRASS WORKS
Successors to A. J. Morse & Son, Inc.
BOSTON, MASS.
1837 - - 1941

Explosion Traps Firemen

Two firemen were killed, one lost a leg, ten others were injured, a number of them seriously, and ten civilian spectators were injured when a violent explosion and a three alarm fire swept the basement of the Watson-Standard Company paint and varnish factory in Pittsburgh, Pa., recently.

All of the injured firemen, including the fireman who lost his life, were trapped in the basement and on the first floor of the building when the explosion took place, while the ten civilian spectators who were on the outside of the building watching the firemen at work were seared by a sheet of flame which leaped thirty feet from the basement windows and cut by flying particles of broken glass and wreckage hurled in all directions by the force of the terrific blast.

The blast, which shook the entire building, tore up the inside of the basement, blew out four large seventeen-foot steel window frames and sashes, shattering the glass in hundreds of pieces and shook apart a heavy brick wall enclosing the concrete stair-case between the first and second floors of the building, and ripped out heavy doors, as well as blowing out a number of large skylights on an adjoining building in the rear.

The fire originated in a one-hundred gallon open steel tank on rollers, containing a secret government paint or solvent product which was being rolled towards the elevator shaft in the basement by a paint mixer, one of the three workmen in the building at the time, when the contents of the tank, which produced very strong fumes, started to splash and ignited from some cause unknown.

The paint mixer, Charles G. Sheets, aged 28 years, whose clothing took fire when the contents of the tank ignited, burning him on the arms, yelled to the watchman, who was on the first floor of the building, to send in an alarm, which was sounded from A. D. T. Box, Station 713, in the building at 1:11 A. M.

Immediately following the sounding of the alarm from the A. D. T. Box, another one of the three workmen ran to Galveston and Shore Avenues, a half block from the building and sent in the first alarm from the street box, Station 39, at 1:12 A. M.

When Engine Companies Nos. 47, 43, 46 and Truck 47 arrived on the scene in command of Acting Battalion Chief Thomas F. O'Connors of the Fifth Battalion, the firemen found an intensely hot fire in progress among the drums of solvents, paint products, etc., with the flames rapidly spreading throughout the basement, and out of control of the automatic sprinklers which were in operation.

The firemen, some of them wearing gas masks, immediately dragged lines into the building and were attacking the flames with pumper and hydrant streams, and were spraying chemicals, including fire foam, on the burning tanks and drums in the basement, and had ventilated the building, and from all indications had the fire beaten down and practically extinguished within fifteen minutes after their arrival, when the terrific blast took place at about 1:30 A. M.

A number of the firemen working in the basement were seared and severely

CANVEX
TRADE MARK

Have Your Firecoats Lost Their Water Repellancy?

Check your firecoats now! If they do not shed water apply CANVEX — a clear solution that was primarily developed to treat Firehose and Salvage Covers to prevent mildew and to waterproof the fabric of the hose.

Ask your regular distributor or write to

SOILICIDE LABORATORIES
MONTCLAIR, N.J.

CANVAS GOODS

"DANDRY" SALVAGE COVERS

Prevent Water Damage

Thoroughly impregnated by a triple chemical process, and sturdily built, they are light and easily handled. Unlike ordinary covers, "Dandry" Salvage Covers will remain soft and pliable, will not freeze or crack, even at very low temperatures, or become greasy and sticky when subjected to extreme heat.

The choice of leading Fire Departments and Civilian Defense organizations, "Dandry" Salvage Covers will also serve *you* better.

C.R.DANIELS, INC.
Manufacturers of Everything of Canvas
101 CROSBY ST. • NEW YORK, N.Y.
Newark • Boston • Buffalo • Chicago • Cleveland • Detroit
Milwaukee • Philadelphia • Pittsburgh • Alberton, Md

A BADGE
to be proud of
NOW
more than ever
BEFORE!

For the past 60 years we have supplied the fire fighters of America with the finest badges they have ever worn.

Now — because of the government's prohibition of the use of nickel, brass, copper, nickel plating, and chromium — we are making these badges and insignia in sterling silver, sterling silver gold plated, rolled gold on sterling silver, and 14 karat gold.

Today — for just a little more, you get a sterling silver Braxmar Badge — without doubt the best badge you can buy anywhere.

Recommend Braxmar to all your fellow fire fighters and wear one yourself.

The blue covered catalog is the latest published but write for our new price list. Only prices in the catalog on 14 karat gold items are still in effect. All auto plates are discontinued for the duration.

C. G. Braxmar Co., 242 W. 55th St., N. Y.

BRAXMAR BADGES

Standard for over 60 years

burned by sheets of flame and were buried under piles of brick, heavy doors and other wreckage, while others were hurled out of the basement by the blast.

The second and third alarms were sent in at 1:39 and 1:40 A. M.

The second alarm was responded to by Engine Companies No. 19, 45, 52, Truck 46, Deputy Chief Charles J. McDermott, and Chief of the Department Edward J. Kerr, and the third alarm by Engine Companies No. 32, 30 and 42. A special telephone call which was sent out shortly after the arrival of the first alarm companies, brought the foamite wagon, loaded with a foam generator and a supply of foamite powder to the scene.

Chief Kerr, immediately upon his arrival, took command and directed the work of the firemen in controlling and extinguishing the fire, which was accomplished in a little over four hours' time.

A manual force of sixty-two firemen, including the two Chief Officers, responded to scene of the fire, with fifteen pieces of apparatus, two high pressure pumpers, one 1,250 gallon pumper, two 1,000 gallon pumpers, four 750 gallon pumpers, the foamite wagon and two 75-foot four-wheel tractor drawn aerial trucks.

By hard and efficient work, the firemen extinguished the fire with eight powerful pumper streams and one hydrant stream, with 5,500 feet of 2½-inch hose in service and twenty-three fifty-pound cans of foamite powder.

William E. Patterson

Plane Crash Fires House

Swooping down to almost ground level, an army plane piloted by Lieut. Richard M. Craighill, of Cocoran, California, crashed into the 200-year-old historical mansion of Mrs. Ruth Weeks of Valley Road, New Canaan, Conn., on October 12. Craighill's plane failed to come out of a spin and he was instantly killed in the crash.

The plane was destroyed and the recently modernized homestead was practically leveled by fire, despite the efforts of New Canaan and Norwalk firemen, who braved the plane's exploding machine gun bullets which sprayed the area for some distance. One fireman, John Tiana, was injured during the course of the blaze.

The fire quickly consumed both the plane and the spacious home, causing damage estimated at $50,000. Mrs. Weeks, owner of the modernized mansion, a maid and three workmen who were in the home at the time of the crash fled through a back door and escaped unhurt after the ship struck with a terrific impact and buried itself in the interior of the house.

THOMAS F. MAGNER.

FWA Allotment Covers Fire Department Salaries

Presidential approval of a maintenance-and-operation project in a war-congested city in the State of Washington was announced recently by Assistant Regional Director L. R. Durkee of the Federal Works Agency. The FWA allotment of $102,330 was made to cover cost of salaries of employees of the fire and police departments of Bremerton, Wash.

★

WHEREVER THE BATTLE
against asphyxia
RAGES
you will find the
EMERSON RESUSCITATOR
INHALATOR & ASPIRATOR

rendering conspicuous service . . . . . .

Let us show how this life saving apparatus fits into your program.

J. H. EMERSON COMPANY

Representatives in Principal Cities

Cambridge, Mass.

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WHEN YOU BUY
from
BOYER
You Get the best for less!
★
Headquarters for
FIRE APPARATUS and FIRE DEPARTMENT SUPPLIES
★
BOYER FIRE APPARATUS CO.
LOGANSPORT IND.

THE *New* WHEAT
Rechargeable Spotlight
MODEL 158
2500 FOOT BEAM
25000 CANDLE POWER
1000 HOURS OPERATION

Critical Materials Reduced to a Minimum to insure Availability
FEATURES
★ Positive "non-spill" Construction
★ Less expensive Operation than dry cells
★ Free use of Hands. Light carries conveniently on Shoulder Strap
★ Weighs only 92 ozs. complete
★ Simple to Charge and Water No need to take Lamp apart
★ Light can be Focused and Directed as Desired
WRITE FOR COMPLETE DETAILS.
KOEHLER MANUFACTURING COMPANY, INC.
MARLBORO, MASSACHUSETTS, U.S.A.

Fire Marshal Scott Loaned to Canadian Government

Fire Marshal W. J. Scott of Ontario has been loaned temporarily to the Canadian Government and is now attached to the Dominion Office of Civil Air Raid Precautions for work in connection with the ARP Fire Services throughout Canada. In these new duties he has just returned from a two weeks' survey of the ARP Fire Services on the Pacific Coast and is now engaged in similar work on the Atlantic Coast. He will maintain his headquarters at Toronto.

The Round Table

(*Continued from page 697*)

The following replies are in answer to a previous question on the use of fire apparatus sirens during wartime.

L. P. Scully, Chief, Erie, Pa.: The City of Erie at the present time is using two air raid sirens, and is also using the whistles of the various manufacturing plants in the city to signal an air raid.

This has proved quite effective and in as much as the characteristics of the air raid sirens are different from those of fire apparatus sirens, we continue to permit the use of fire sirens when fire apparatus has to answer an alarm.

I have not had any actual experience with alternate signals. However, I believe that their use would tend to be confusing, therefore impairing the efficiency of the signals.

My answer to the problem would be that the community continue to use the present apparatus sirens in preference to alternate signals because air raid sirens can be obtained whose characteristics as to the pitch, loudness and quality of sound are different from those of fire apparatus sirens. By doing this, the use of alternate signals can be eliminated and would also lessen the confusion caused by unfamiliarity of the sound emitted by alternate signals.

James D. Kailor, Chief, Columbus, Ind.: I believe that sirens should be used just on fire department equipment and police cars. In our city the sheriff's and deputy sheriff's cars as well as undertakers, ambulances and pick up cars use sirens. I believe that the use of sirens is overdone.

Whistles should be used as air raid warnings in our city, for the cooperation of the factories could be secured.

Herman E. Gutheim, Chief, Cambridge, Mass.: We are still using sirens for answering alarms and will continue to do so until we are ordered to do otherwise. We also use bells.

I know of no better warning signal on fire apparatus than either a siren or a bell, because they have been used for many years for that purpose and people look for them. We have also used our sirens for air raid warnings to augment the other signal.

Wilbur E. Seaman, Fire Marshal, Hempstead, N. Y.: We still permit the use of sirens in responding to alarms, but have issued orders that they must be used only at street intersections or in passing other cars, and then only for as short a duration as safety requires. All apparatus is equipped

ELK HART IND
A PARTIAL LIST OF ELKHART PRODUCTS
Shut-Off Nozzles
Controlling Nozzles
Turret Pipes
Fire Department Extinguishers
Extinguisher Holders
Fire Truck Body Fittings
Hose House Equipment
All Types of Hose Couplings
Sliding Poles, Railings and Canopies
Fog Nozzles
Hose Test Pumps
Threading Tools
Coupling Expanders
Pump and Hydrant Valves
Hose Racks and Cabinets
Siamese Connections
Underwriters' Industrial Extinguishers
38 years' service in the fire field
•
Prompt service - Quality products
•
Send for illustrated folder on the New Elkhart Mystery Nozzle.
ELKHART BRASS MFG. CO.
ELKHART, INDIANA

SEALAND TRAILER PUMPS
These mobile trailers made in 150, 250 and 500 gallon units are powered with gasoline motors, carry 500 ft. of double jacket Fire hose, and may be equipped with 100 gallon booster tanks. Skid mounted units can be furnished. Pumps can be purchased without trailers.
THE SEALAND CORP.
Centrifugal Pumps—Fire Alarm Systems—Modern Fire Apparatus
Post Road & Maple Ave.,
P. O. Southport, Conn.

"THE TOPS" for Safety & Quality

CAIRNS

WINTER EQUIPMENT

Let us outfit you, from head to foot. Secure the advantages of buying ALL you need from ONE source, with the guarantee of satisfaction of America's oldest firm of firemen's outfitters.

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Helmets, with Cushion Lining and Winter Earlaps
Warm Turnout Coats and Trousers
Woolen Mittens, Extra Heavy Flannel Shirts
Fleece-Lined Rubber Coats
Face Shields

•

Write for Circulars

CAIRNS & BROTHER

Outfitters to Firemen Since 1836

444 LAFAYETTE STREET - NEW YORK

GUARDING AMERICA'S HOSE SUPPLY

CIRCUL-AIR HOSE DRYERS

Used extensively in Army, Navy, Marine Corps Arsenals, Air Stations, Ordnance Works; in Shipyards, Aviation, Chemical, Steel and Electrical Works; in Cities, Villages and Fire Districts from Maine to California, this Modern Dryer is doing a fine job of making America's Hose supply "Go Farther and Last Longer."

THE CIRCUL-AIR CORP.

303 DWIGHT BLDG. - - JACKSON, MICHIGAN

with bells and whistles. We never allow the use of sirens or whistles when returning to quarters. Only bells are used.

I would feel safer if all signaling devices could be used, but we have been able to get by so far without the promiscuous sounding of sirens as in the past.

I have no solution to the problem other than the education of the public to recognize the present system and to give greater consideration to bells at all times.

Ellsworth B. Ogden, Chief, Lynbrook, N. Y.: We do not permit the use of fire apparatus sirens in answering alarms. Bells are used. We feel that they are satisfactory. We are fully covered in this village by five sirens, two of which are five horsepower and three, one-half horsepower.

J. T. Riley, Chief, Albany, Calif.: We still permit the use of siren on fire apparatus or answering fire alarms.

W. O. Blackwell, Chief, Spartansburg, S. C.: We are not using sirens on fire fire apparatus, but are using bells instead. I believe, however, that one can tell the difference between the sirens on fire apparatus and the air raid siren.

* * *

The following replies are in answer to a previous question on making out-of-town runs and the charges therefor:

C. J. Henry, Chief, Lexington, Ky.: We do not make out-of-city fire runs with the exceptions of the United States Veterans Hospital, the United States Public Health Hospital and several private sanitoriums located just outside of the city limits. We make calls for assistance to adjoining towns upon their request to our City Manager or to the Mayor. No charges are made for these calls, except where equipment might have to be transported by rail. In that case, the transportation charges are paid by those asking for assistance.

All benefits and privileges of pension protection and insurance are carried on the men as if they were working within city limits.

Ralph C. Dinkel, Chief, Terre Haute, Ind.: We do not charge for out-of-town runs.

We have a state law that requires the city to pay doctor's hospital, nursing and x-ray bills for any city firemen injured in the performance of duty. A fireman is carried on the payroll while off duty due to disability.

The city furnishes fire protection to all factories outside the city limits. When we respond to fires in these factories, the city is compelled to give the men this protection.

If a fireman is permanently disabled, he is taken care of by the Firemen's Pension Fund.

J. L. Murphy, Chief, Kingston, N. Y.: Some of the towns we cover do carry insurance protecting the paid firemen. No insurance is carried by our city to protect firemen working at fires outside the city.

I believe that a city, town, village or fire district having an organized fire department, is responsible for any injuries to the men or damage to apparatus received while rendering assistance to such town.

Perhaps the question involved is who would pay the bill if a fireman

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Made of Chrome Molybdenum steel, the frame may easily be folded for storage within a few seconds.

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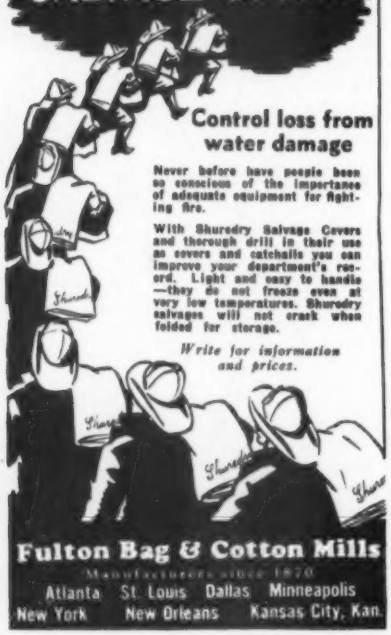

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were injured while answering a call for aid received from a town or village not having an organized fire department. This has been a debatable question for some time. I have heard various opinions as to who would be responsible for the bill.

We have had some experience in such a case. Two firemen were injured while working at a fire in a town which did not have an organized fire department. Fortunately the town paid the doctor's and hospital bills. Had the injuries been more severe, the question as to who would assume the responsibility might have been raised.

P. M. Wendel, Chief, Wichita, Kan.: We charge $20.00 per apparatus for the first two and $10.00 for each additional piece thereafter.

A $2,000.00 accident insurance policy on each man is provided by the department. This also covers the men while answering alarms in the eleven townships to which we give fire protection.

Only townships which have a contract with the City of Wichita are provided with the protection.

William L. Ryan, Chief, Dubuque, Ia.: We charge $50.00 per hour for calls outside the city limits.

The state laws of Iowa prohibit paid fire departments from responding to fires outside the city, unless under contract, this protection to be extended only to institutions, industries, corporations, organizations, etc. The law prohibits giving protection to private dwellings regardless of how near they are to the city. Each applicant under the above headings, where protection is permitted by law, is required to post a cash amount of $100.00, this money to be applied for the first two hours of fire department service. If the fire department is required to remain at the fire for a longer period of time, a charge of $50.00 per hour or part thereof is made for the additional time. The money derived from this source is used to pay premiums on collision and liability insurance. Under this contract system the members of the fire department receive the same protection as they would while operating in the city.

Joe Carmichael, Chief, Little Rock, Ark.: We have contracts with mills and plants within a radius of a half mile, who desire fire department protection.

Our rates are based upon: 1. $100 per year per $25,000 assessed valuation, 2. $50.00 per hour, and 3. $25.00 for each piece of apparatus.

The firemen have the same insurance protection outside the city limits as they have within.

W. Q. Dowling, Chief, Jacksonville, Fla.: We do not make a charge for out-of-the-city calls. We go as far as two miles out of the city limits..

The firemen get the same protection as they would if they were injured in the city. They receive full salary for an indefinite period and all hospital, doctor's and medicine bills are paid, while off duty or until they are pensioned if not able to return to duty.

Albert Krenz, Chief, Clinton, Ia.: We do charge for out-of-town calls. Our charge is $25.00 for each call, that is, for farm fires. If the call is from one of the neighboring towns for an emergency, we make no charge.

There is no insurance provided for

Fire Equipment with BUILT-IN **DURABILITY**

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Today's emergency conditions require that the nation's fire service be maintained at peak efficiency at all times.

You can rely on Campbell-Hausfeld equipment to deliver maximum efficiency, for it is designed for extra sturdiness.

The Campbell - Hausfeld line includes fire hose nozzles, wheels, plugs, caps, etc.

We will be glad to send prices on request.

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A remembrance that lives and is appreciated the year round

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Send your list in now. We'll check the names and let you know immediately if any of the persons are already regular subscribers.

The new subscriptions will start with the December number and a Christmas Gift Letter conveying your greetings will be mailed to be received before the holiday.

FIRE ENGINEERING
24 West 40th Street, New York

men on out-of-town calls. If we have any men injured, the city takes care of them.

S. J. Flores, Chief, Shreveport, La.: We are trying to figure out some schedule for charges for outside of the city runs. The Chamber of Commerce and myself are working on these now. We answer a great number of alarms outside of the city.

Frank Pulaski, Chief, Boise, Ida.: We have a reciprocal agreement with the Veterans Hospital and Gowan Field and thus make no charge for answering alarms there. These are the only places we respond to outside of the city.

There is no insurance provided for firemen leaving the city. If they get injured while going to or from, or while fighting a fire outside the city, they pay their own hospital costs.

T. H. Gordon, Chief, Great Falls, Mont.: It is customary in our department to answer calls outside of city limits within a reasonable distance. This service has been given free of charge.

The city carries no insurance on any fireman. This is taken care of by our Relief Association which provides hospitalization and doctor for sickness and accidents. In case of death, the widow will receive a pension of one-half of the deceased's monthly pay.

L. B. Canfield, Chief, Beverly Hills, Cal.: The City of Beverly Hills is completely surrounded by the City of Los Angeles. We make many runs each year into the Los Angeles limits, but no charges are made for such service.

The men in the department are fully covered and protected in or out of the city if they are performing duties directed by the Fire Chief.

H. C. Root, Chief, Springfield, Mass.: We do not charge for out-of-town runs.

The question of who would pay the hospital costs, etc., of a fireman injured while working on an out-of-town fire is a legal question which would have to be decided by the legal department. No actual test case has ever come up for a decision for the purpose of establishing a precedent.

E. L. Mathews, Chief, Tuscaloosa, Ala.: We average about twelve out-of-town runs a year, most of them being just outside the city limits. So far we haven't made any charges where the calls were near by. However, there is a small city across the river from us whom we charge $50.00 per run. We charge them because they are on a good financial basis and do not maintain a fire department of their own.

We do not have insurance for the men leaving the city on a run. However, if the department is authorized to go by our city officials, we will be cared for by the city in the event of an accident.

Edward A. McHugh, Chief, Louisville, Ky.: We are not obligated to respond to calls outside the city, but we do in many cases. We make no charge for this service. We have never had anyone injured while responding to these calls, but I presume the City of Louisville would be liable for any injuries to the men.

A. H. Lankford, Chief, Glendale, Cal.: We do not charge for out-of-town runs. The men are covered by the same amount of insurance as they are on runs within the city limits.

WHY GO IN BLIND?

Do as thousands of fire-fighters — Wear H. S. COVER'S famous Nod & Shake

FOG-PROOF GOGGLES

Not just ordinary gas-tight, smoke-proof goggles! Water placed inside lense keeps fog off indefinitely!

SAMPLE $1.65

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Experience indicates that more damage is done in an enemy air raid by incendiary bombs than by demolition bombs. City officials and water works operators are striving for maximum fire protection by increased installation of high quality and dependable fire-hydrants and valves, such as M & H.

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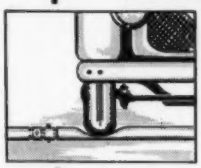
CONSERVATION FACTS on how to save your hose

Fact No. 2

NEVER PERMIT ANY VEHICLE TO DRIVE OVER HOSE!



Under no conditions should vehicles be permitted to cross fire hose lines unless hose is properly protected by the use of bridges available for this purpose.

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Chemical Engine and Booster Hose
Suction Hose
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MASTER ★ LIGHTS

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Notice the perfect balance with beam turned up or down. Use rechargeable batteries now.

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Lubrication of trucks, jeeps, tanks, planes and all other mobile units — inflating tires — pumping gas — powering repair units — these are but a few of the scores of jobs on which Briggs & Stratton instant-starting gasoline motors are now doing their part—furnishing dependable power to speed up this work with our armed forces everywhere.

In the War Program of the United Nations, Briggs & Stratton 4-cycle, air-cooled motors are now giving the same kind of service that has made them world famous — "preferred power" wherever gasoline powered equipment is used.

If you are now planning post-war production of gasoline powered equipment, we would appreciate the opportunity of consulting with you.

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NOVEMBER, 1942

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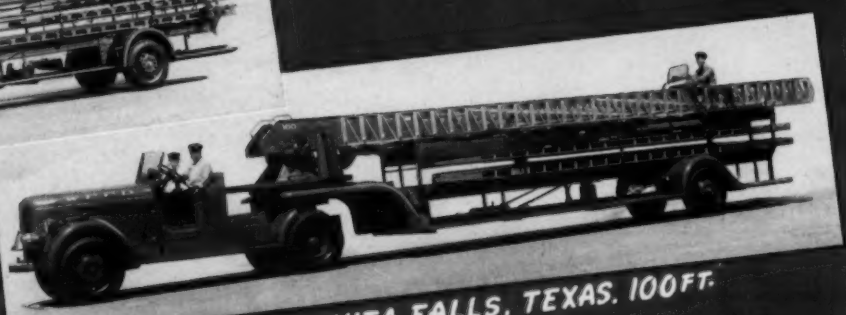
The Washington aerial listed in these additional 1942 Pirsch deliveries makes eight Pirsch aerials in our capital city: 6—100' and 2—85'.



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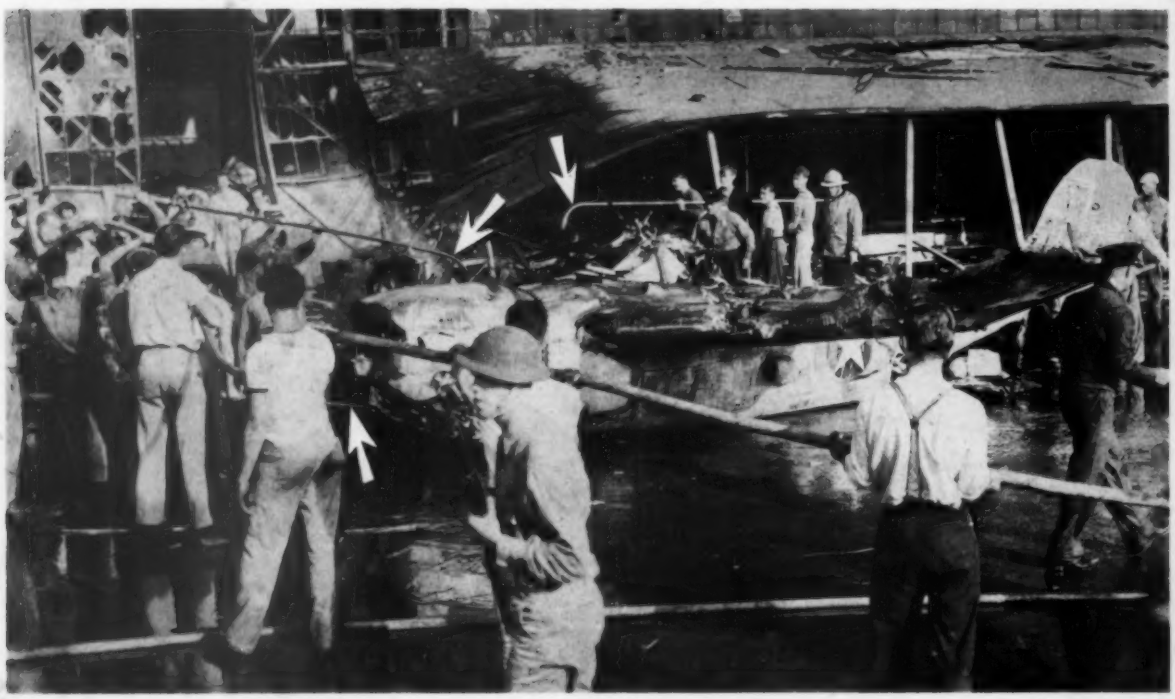

NOT A DEMONSTRATION BUT AN *ACTUAL FIRE!*

THE above unretouched photograph shows three of the five 10-ft. 1" B Fognozl Applicators used at Lockheed Air Terminal at a recent airplane crash and fire. The plane crashed on taking off and smashed into four other planes, all fully fueled with 100 octane gasoline, and then into a nearby hangar which housed a machine shop—a wooden store room and piles of motor boxes, all of which ignited when the plane burst into flames.

Prompt action by the field's Fire Department in putting into operation their Fognozl equipment kept the fire loss to the hangar down to a minimum. Most of the damage shown in the photo was due to the initial impact rather than to the resultant fire.

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- **RAPID EXTINGUISHMENT**
- **REDUCED WATER DAMAGE**
- **ECONOMY**

Chief R. B. Gottschalk of the Vega Airplane Company Fire Dept. has this to say about his Fognozl equipment: "Thanks for selling us the equipment used. I wish that every fire fighting outfit that may have to control 100 octane gasoline fires could have a preview of your equipment in actual operation before considering other less efficient products. We have had several occasions to use your equipment lately under severe fire conditions, and there is no doubt in my mind that it is the only effective means of extinguishing highly volatile liquids as well as providing protection for the firemen who may be able to effect a rescue."

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